(6)

No. 94-1592

FILED
AUG 3 1995

IN THE
Supreme Court of the United States
OCTOBER TERM, 1995

BROTHERHOOD OF LOCOMOTIVE ENGINEERS and
UNITED TRANSPORTATION UNION,
Petitioners,

v.

THE ATCHISON, TOPEKA AND SANTA FE
RAILWAY COMPANY, *et al.*,

and

FEDERICO PENA, *et al.*,
Respondents.

On Writ of Certiorari to the
United States Court of Appeals
for the Seventh Circuit

BRIEF FOR THE PETITIONERS

Of Counsel:
HAROLD A. ROSS
General Counsel
BROTHERHOOD OF LOCOMOTIVE ENGINEERS
1548 Standard Building
1370 Ontario Street
Cleveland, Ohio 44113
(216) 861-1313

CLINTON J. MILLER, III
General Counsel
UNITED TRANSPORTATION UNION
14600 Detroit Avenue
Cleveland, Ohio 44107
(216) 228-9400

LAWRENCE M. MANN *
ALPER & MANN, P.C.
400 N. Capitol Street, N.W.
Suite 851
Washington, D.C. 20001
(202) 298-9191
Counsel for Petitioners

August 3, 1995

* Counsel of Record

WILSON - EPES PRINTING CO., INC. - 789-0096 - WASHINGTON, D.C. 20001

BEST AVAILABLE COPY

105 pp

QUESTION PRESENTED

Whether compulsory time spent waiting by a train crew for deadhead transportation is "on-duty time" under the Hours of Service Act.

LIST OF ALL PARTIES

The following parties appeared before the Court of Appeals:

Petitioners:

Brotherhood of Locomotive Engineers and
United Transportation Union

Respondents:

The Atchison, Topeka and Santa Fe Railway Company
Burlington Northern Railroad Company,
Consolidated Rail Corporation,
CSX Transportation, Inc.,
Illinois Central Railroad Company,
Norfolk Southern Railway Company,
Norfolk & Western Railway Company,
Southern Pacific Transportation Company,
and Union Pacific Railroad Company.

and

Federico Peña, Secretary of Transportation,
Department of Transportation,
S. Mark Lindsey, Acting Administrator,
and Federal Railroad Administration

TABLE OF CONTENTS

	Page
QUESTION PRESENTED	i
LIST OF ALL PARTIES	ii
TABLE OF AUTHORITIES	v
OPINIONS BELOW	1
JURISDICTION	2
STATUTE INVOLVED	2
STATEMENT OF THE CASE	4
SUMMARY OF ARGUMENT	8
ARGUMENT	13
I. THE HSA, ITS LEGISLATIVE HISTORY, AND THE ACT'S REMEDIAL PURPOSE ALL SUPPORT THE CONCLUSION THAT COMPULSORY TIME SPENT BY RAILROAD EMPLOYEES WAITING FOR DEADHEAD TRANSPORTATION IS TIME ON DUTY	13
A. Compulsory Waiting Time Being Time On Duty Is Supported By The Plain Meaning Of The Act	13
B. The Seventh Circuit's Interpretation Is Contrary To The Legislative History	18
C. The Seventh Circuit's Interpretation Is Inconsistent With Case Law	25
II. THE OPERATING RULES OF MOST RAILROADS REQUIRE CREWS WHO ARE "RELIEVED FROM DUTY" TO HAVE FURTHER RESPONSIBILITIES	28

TABLE OF CONTENTS—Continued

	Page
III. THERE EXISTS A SERIOUS SAFETY ISSUE WHICH IS DIRECTLY IMPACTED BY THE DECISION OF THE ELEVENTH CIRCUIT	29
CONCLUSION	37
APPENDIX A	1a
APPENDIX B	8a
APPENDIX C	13a
APPENDIX D	17a
APPENDIX E	20a
APPENDIX F	25a
APPENDIX G	46a
APPENDIX H	54a
APPENDIX I	56a

TABLE OF AUTHORITIES

Cases

	Page
Administrator, Federal Aviation Administration, et al. v. Robertson, et al., 422 U.S. 255 (1975)	17
Atchison, Topeka & Santa Fe Railroad v. United States, 244 U.S. 336 (1917)	18
Atchison, Topeka & Santa Fe Railroad v. United States, 269 U.S. 266 (1925)	18
Brotherhood of Locomotive Engineers v. Skinner, No. 90-0051, slip op. at 7 (D. Ore. July 29, 1991) Unpublished Opinion)	4, 16
Bruce Babbitt, et al. v. Sweet Home Chapter Of Communities For A Great Oregon, et. al., 63 U.S.L.W. 4665 (U.S. June 27, 1995)	17
Chicago & Alton Railroad v. United States, 247 U.S. 197 (1918)	18
Hoffman v. Connecticut Dept. of Income Maintainance, 492 U.S. 96 (1989)	17
Mountain States Telephone & Telegraph Co. v. Pueblo of Santa Ana, 472 U.S. 237 (1985)	17
Missouri, Kansas & Texas Railway Company v. United States, 231 U.S. 112 (1913)	10, 25
Northern Pacific Ry. Co. v. United States, 220 F. 108 (9th Cir. 1915)	11, 26, 27
Reiter v. Sonotone Corp., 442 U.S. 330 (1979)	17
San Pedro, L.A. & S.L. R.R. Co. v. United States, 213 F. 326 (8th Cir. 1914)	11, 27
United States v. Chicago, M. St. P. & P., R.R., 195 F. 783 (D.C. Wash. 1912)	11, 26
United States v. Nordic Village, Inc., 503 U.S. 30 (1992)	17
United States v. Northern Pacific Ry. Co., No. 2635, W.D. Wash., Feb. 13, 1914 (Unpublished Decision)	11, 26
United States v. Pennsylvania R.R., 275 F.Supp. 345 (W.D. Pa. 1967)	10, 22, 25
United States v. Southern Pacific Co., 245 F. 722 (9th Cir. 1917)	11, 27
United Transportation Union v. Skinner, 975 F.2d 1421 (9th Cir. 1992)	4, 11, 22, 27

TABLE OF AUTHORITIES—Continued

Page

Wilderness Society v. Morton, 479 F.2d 842 (D.C. Cir. 1973), *cert. denied*, 411 U.S. 917 (1973) 17

Statute

Judicial Code
28 U.S.C. § 1254(1) 2

Hours of Service Act
49 U.S.C. §§ 21101-21107 5
49 U.S.C. § 21101(5) 17
49 U.S.C. § 21103 ..... 2, 3
49 U.S.C. § 21103(a)(1) 5
49 U.S.C. § 21103(a)(2) 5
49 U.S.C. § 21103(b)(1) ..... *passim*
49 U.S.C. § 21103(b)(2) 17
49 U.S.C. § 21103(b)(3) ..... *passim*
49 U.S.C. § 21103(b)(4) 14, 16
49 U.S.C. § 21103(b)(5) ..... *passim*
49 U.S.C. § 21103(b)(7) 8, 14, 16, 21

Legislative Matters

H.R. Rep. No. 108, 103rd Cong., 2d Sess. 5 (1993) 3
H.R. Rep. No. 7641, 59th Cong., 2d Sess. (1907) .. 9, 18
H.R. Rep. No. 91-469, 91st Cong., 1st Sess. 6 (1969) 29
116 Cong. Rec. H29,322 (daily ed. Oct. 9, 1969), (Statement of Representative Olsen) 10, 19
S. Rep. No. 604, 91st Cong., 1st Sess. Reprinted in 1969 U.S. Code Cong. & Admin. News 1636, 1639 ..... 9, 21
Hearings on Deparment of Transportation and Related Agencies Appropriations for 1992, Before the House Subcommittee on the Department of Transportation and Related Agencies Appropriations of the Committee on Appropriations, 102nd Cong., 1st Sess. 35 (1991) 33
Hearings on H.R. 8449, H.R. 84, and H.R. 9515 Before the House Committee on Interstate and Foreign Commerce 91st Cong., 1st Sess. 29-30, 35, 99-100, 135, 199 (1969) 9-10, 20, 21

TABLE OF AUTHORITIES—Continued

Page

Hearings on Railroad Safety Programs, Before the House Subcommittee on Transportation And Hazardous Materials of the Committee on Energy and Commerce, 102nd Cong., 1st Sess. 167 (1991) 34
1969 Hearing at 7 and *Hearings on S.1938 Before the Senate Subcommittee on Surface Transportation of the Committee on Commerce*, 91st Cong., 1st Sess. 14 (1969) 20
Shift Work Scheduling and Biological Clocks: Hearings Before the House Subcommittee on Investigations and Oversight of the Subcommittee on Science and Technology, 98th Cong., 1st Sess. 176 (1983) 34

Miscellaneous

Affidavit of R. E. Futrell 6, 7, 22, 23
Affidavit of C. E. Anderson 7
Affidavit of J. U. Chrisman 7, 22, 23
Dr. Charles Czeisler, New York Times, May 15, 1990 at p. C8 30
Michael K. Coplen, Rocky Mountain News, May 21, 1984 at 39 30
Engineman Stress and Fatigue: Pilot Tests, U.S. Department of Transportation, Federal Railroad Administration DOT/FRA/ORD-92-17 (June, 1992) 35
Issues in Locomotive Crew Management and Scheduling, U.S. Department of Transportation, Federal Railroad Administration DOT/FRA RRP-91-01 (February, 1991) 7, 35
Letter Dated March 1, 1995 from Jolene Molitoris to Robert A. Blanchette 24
National Transportation Safety Board Railroad Accident Report Head On Collision Between Iowa Interstate Railroad Extra 470 West and Extra 406 East With Release of Hazardous Materials Near Altoona, Iowa (July 30, 1988) NTSB/RAR-89/04 (July 6, 1989) 24

TABLE OF AUTHORITIES—Continued

	Page
National Transportation Safety Board Hazardous Materials Accident Report, Hazardous Materials Release Following the Derailment of Baltimore and Ohio Railroad Company Train No. SLFR, Miamisburg, Ohio (July 8, 1986) NTSB/HZM-87/01 (September 29, 1987)	24
National Transportation Safety Board Railroad Hearings on Head-End Collision of Consolidated Rail Corporation Freight Trains UBT-506 and TV-61 Near Thompsontown, Pennsylvania, January 14, 1988, at 1622	31
National Transportation Safety Board Railroad Accident Report, Head-End Collision of Consolidated Rail Corporation Freight Trains UBT-506 and TV-61, Near Thompsontown, Pennsylvania, January 14, 1988, NSTB/RAR-89/02 (1989)	31
National Transportation Safety Board Railroad Accident Report, Atchison, Topeka and Santa Fe Railway Company (ATSF) Freight Trains ATSF 818 and ATSF on 891 on the ATSF Railway Corona, California (November 9, 1990) RAR-91/103 at 45 (July 23, 1991)	34
Ohio Rail Safety Initiative, United States Department of Transportation, Federal Railroad Administration, Office of Safety Region 2 at 07 (November 1994)	36
Railroad Safety: New Approach Needed For Effective FRA Safety Inspection Program, U.S. General Accounting Office/RECD-90-194 (July 1990)	24
Railroad Safety: Weaknesses Exist in FRA's Enforcement Program U.S. General Accounting Office/RCED-91-72 (March 22, 1991)	24
Wilse B. Webb, *Biological Rhythms, Sleep, and Performance,* 59-87, 110-141, 175-204 (John Wiley & Sons 1892)	34

IN THE
Supreme Court of the United States
OCTOBER TERM, 1995

No. 94-1592

BROTHERHOOD OF LOCOMOTIVE ENGINEERS and UNITED TRANSPORTATION UNION,
Petitioners,
v.
THE ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY, *et al.*,
and
FEDERICO PENA, *et al.*,
Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Seventh Circuit

BRIEF FOR THE PETITIONERS

OPINIONS BELOW

The ruling at issue here, of the United States Court of Appeals for the Seventh Circuit, *en banc* is reported at 44 F.3d 437 and attached to Pet. Appendix 1a-20a. The ruling of the panel for the Seventh Circuit, originally affirming the decision of the Federal Railroad Administration is reported at 28 F.3d 324 attached to Pet. Appendix 21a-28a.

JURISDICTION

The *en banc* decision of the United States Court of Appeals for the Seventh Circuit reversing the ruling of the three judge panel was entered on December 29, 1994. The petition for writ of certiorari was filed on March 28, 1995, and was granted on June 19, 1995. The jurisdiction of this Court is invoked pursuant to 28 U.S.C. § 1254(1).

STATUTE INVOLVED

The Federal Hours of Service Act (hereinafter "HSA" or "Act"), provides in pertinent part:

> § 21103. Limitations on duty hours of train employees
>
> (a) GENERAL.—Except as provided in subsection (c) of this section, a railroad carrier and its officers and agents may not require or allow a train employee to remain or go on duty—
>
> (1) unless that employee has had at least 8 consecutive hours off duty during the prior 24 hours; or
>
> (2) after that employee has been on duty for 12 consecutive hours, until that employee has had at least 10 consecutive hours off duty.
>
> (b) DETERMINING TIME ON DUTY.—In determining under subsection (a) of this section the time a train employee is on or off duty, the following rules apply:
>
> (1) Time on duty begins when the employee reports for duty and ends when the employee is finally released from duty.
>
> (2) Time the employee is engaged in or connected with the movement of a train is time on duty.
>
> (3) Time spent performing any other service for the railroad carrier during a 24-hour period in which the employee is engaged in or connected with the movement of a train is time on duty.

> (4) Time spent in deadhead transportation to a duty assignment is time on duty, but time spent in a deadhead transportation from a duty assignment to the place of final release is neither time on duty nor time off duty.
>
> (5) An interim period available for rest at a place other than a designated terminal is time on duty.
>
> (6) An interim period available for less than 4 hours rest at a designated terminal is time on duty.
>
> (7) An interim period available for at least 4 hours rest at a place with suitable facilities for food and lodging is not time on duty when the employee is prevented from getting to the employee's designated terminal by any of the following:
>
> (A) a casualty.
>
> (B) a track obstruction.
>
> (C) an act of God.
>
> (D) a derailment or major equipment failure resulting from a cause that was unknown and unforeseeable to the railroad carrier or its officer or agent in charge of that employee left the designated terminal.
>
> * * * *

49 U.S.C. § 21103.[1]

---

[1] Formerly contained in 45 U.S.C. § 61(b) and 62(b). Effective July 6, 1994, Congress codified most of the transportation laws into Title 49 of the U.S. Code, the Hours of Service Act being one of those statutes. In the codification Congress stated that the new sections may not be construed as making a substantive change in the laws replaced, nor impair the precedential value of earlier judicial decisions and other interpretations. See H.R. Rep. No. 180, 103rd Cong., 2d Sess. 5 (1993).

STATEMENT OF THE CASE

The genesis of this litigation arose in 1990 when the affected engineers and trainmen brought suits in the district courts of Oregon and the Northern District of California. On July 29, 1991, the Oregon district court granted summary judgment in favor of the BLE and determined that there was:

> . . . no basis for concluding . . . that Congress intended to overturn prior judicial holdings that time spent waiting constitutes time on duty. Rather, I find that Congress intended time spent waiting for deadhead transportation to fall within the general statutory definition of time on duty which commences when an employee reports for duty and terminates when the employee is finally released from duty.

Brotherhood of Locomotive Engineers v. Skinner, No. 90-0051, slip op. at 7 (D. Ore. July 29, 1991) (Unpublished Opinion) (App. 6a).[2] The UTU case in California was dismissed on procedural grounds. Both cases were appealed and decided by the Ninth Circuit in the same opinion. *United Transportation Union v. Skinner,* 975 F.2d 1421 (9th Cir. 1992).

The Ninth Circuit, in a unanimous decision, held that the HSA was violated by requiring a crew to stay on a train awaiting deadhead transportation. It held:

> In conclusion, we note once again that waiting time has been considered time on duty throughout the eighty-five year history of the HSA. The FRA's position that this understanding was changed by the 1969 proviso regarding deadhead time finds no support in the statutory language, in the legislative history of the 1969 amendments, or in the policies underlying the statute, and is contrary to reason. Accordingly, we reject it.

975 F.2d at 1428.

---

[2] "App." refers to the appendix attached to this Brief.

Subsequently, the FRA on October 28, 1992 concluded that the Ninth Circuit's interpretation of the HSA was reasonable, and on January 1, 1993 attempted to apply the Ninth Circuit interpretation nationwide. After several petitions to the Federal Railroad Administration (hereinafter "FRA") to reconsider its decision, various railroads appealed to the Seventh Circuit. In fact three petitions for review were filed with the Seventh Circuit on this same issue.

The initial decision by a panel of the Seventh Circuit held that the decision of the FRA to apply the Ninth Circuit's decision nationwide was reasonable and affirmed the FRA's determination. On petition for Rehearing and Suggestion of Rehearing *En Banc,* the Seventh Circuit's *en banc* panel granted the railroads' petitions and vacated the FRA's orders.

On March 1, 1995 the FRA sent a letter to the Vice President-Law and General Counsel of the Association of American Railroads informing him that FRA would apply the Seventh Circuit decision in every locale but in those states comprising the Ninth Circuit. (App. 8a).

The HSA limits the hours of work of railroad employees engaged in duties related to train operations and mandates certain off-duty periods. 49 U.S.C.§§ 21101-21107. It limits to twelve hours the number of consecutive hours an employee can remain *on duty.* 49 U.S.C. § 21103(a)(1). The HSA also requires that a crew member be allowed ten hours *off-duty* before going back *on-duty* when that employee has worked the twelve hour statutory maximum. 49 U.S.C. § 21103(a)(2). Furthermore, it mandates that before an employee may be placed back on-duty, he/she must have received at least 8 hours off-duty during the preceding twenty-four hours. *Id.*

The issue to be resolved in this litigation arises in the common situation when railroad crew members, after working a 12 hour tour of duty, are instructed to stop their train and remain at the site until a new crew relieves them. During that period of time commonly known as

waiting time, crew members typically are still responsible to their employers for the safety of their train. Both the railroads and the FRA in the court below mischaracterized the issue of *waiting time* as a situation where crew members are *relieved from any further operating responsibilities.*[3] There exist numerous fact patterns, but normally the crew is not free to leave the train, and continues to be subject to further orders from the railroad.[4] While awaiting arrival of another crew, the employees are required to protect the train against vandalism, assure that the brakes remain properly applied to prevent undesired movement, observe passing trains for defects, and to promptly inform the railroad of any problems noticed. If the crew left the train without permission, it could be disciplined and possibly fired. If the train was vandalized and the crew did not attempt to protect it, the employees would be subject to discipline. If the brakes released and caused an undesired movement, the crew could be disciplined, particularly if an accident occurred as a result. If the crew observed an obvious defect on a passing train, and did not inform the railroad promptly, the crew might be disciplined. (See affidavit of R. E .Futrell, App. 15a).[5]

---

[3] It is to be noted that the crews are paid for the entire period of time waiting for deadhead transportation.

[4] The FRA in its Ninth Circuit brief admitted that "During this time [i.e. awaiting the deadhead vehicle] the employee is not, we acknowledge, free to come and go as he pleases." (Brief for appellants in Ninth Circuit at 14).

[5] The affidavits referred to herein were part of the record in the Ninth Circuit. Because the Seventh Circuit case did not allow for an additional underlying factual administrative record to be established (other than the petition by the railroads), these affidavits were submitted in the Seventh Circuit briefs by Petitioners here. Additionally, in the railroads' petition to the FRA, that gave rise to the Seventh Circuit case, they attempted to refute the affidavit of Mr. Futrell, which was part of the Ninth Circuit record. The pertinent facts to be considered in reviewing the Seventh Circuit and Ninth Circuit decisions are the same.

The railroads, in opposition to the petition for certiorari, questioned the appropriateness of petitioner citing certain materials other than what was specifically contained in the administrative record. As we understand practice before this Court:

> If counsel wishes to call the Court's attention to something outside the record, as judicially noticeable or otherwise relevant, the brief should fairly disclose the status of such material. If appropriate, portions may be quoted in the text of the brief itself, or the entire document may be reproduced in an appendix bound with the brief. But it should not be included in the separate Rule 26 joint appendix, which should contain only the significant portions of the certified record.

R.L. Stern, E. Gressman, S. M. Shapiro, *Supreme Court Practice*, 520 (Seventh Ed. 1993). Most of the factual materials cited are publications from government agencies and judicially noticeable. We submit that the remaining articles and railroad rules also are relevant to the Court's determination.

The complaints of employees show that crews are frequently compelled to wait for relief crews several hours after expiration of the 12 hour on-duty limit, and sometimes even up to 10 hours longer. (See affidavits of C. E. Anderson, App. 17a-18a, R. E. Futrell, App. 15a, and J. U. Chrisman, App. 22a). One of the safety hazards involved is not counting the above period as on-duty time is that employees are constantly faced with irregular work hours as well as irregular sleep patterns. Extension of the crew members' work day through protracted periods of time spent waiting for deadhead transportation contributes to employee fatigue. This has been shown to be a significant factor in the safety of rail operations. (See *Issues in Locomotive Crew Management and Scheduling*, U.S. Department of Transportation, Federal Railroad Administration DOT/FRA/RRP-91-01 (February, 1991). (App. 25a).

In order to rectify this problem, all that a railroad needs to do is to plan in advance to have a crew ready to relieve the crew on the train, and to have transportation waiting to take the crew to the point of final release. A railroad in most cases has advance notice by following the train movements, and thereby knows whether the crew on the

train will reach the 12 hour limit. Typical railroad rules require a crew to give sufficient advance notice when it becomes apparent that it will not complete the trip within the lawful period. For example after being on duty 10 hours, a crew is required to notify the train dispatcher the time when it will have been on duty 12 hours. Also, the crew informs the dispatcher in advance when and where the 12 hours are likely to expire.

SUMMARY OF ARGUMENT

A. There are four specific provisions of the HSA which support the conclusion that all compulsory time spent waiting for deadhead transportation is time on duty. As shown below, this period of time is time on duty whether or not the employees are free of all operating responsibilities.

1. 49 U.S.C. § 21103(b)(5) provides that an interim period available for rest at a place other than a designated terminal is time on duty. Therefore, even though a crew member is free from all operating responsibilities, when he/she is relieved at other than the designated terminal, this is counted as time on duty.

2. The HSA delineates what shall be excluded from the definition of time on duty. These are time spent in deadhead transportation, and waiting time that occurs as a result of an act of God or major unforeseen equipment failure (and then only if the unforeseen problem occurs at a location with suitable facilities for room and board for the affected crew). 49 U.S.C. § 21103(b)(7). It is significant that Congress did not place waiting time for deadhead transportation as one of the exclusions.

3. 49 U.S.C. § 21103(b)(3) states that in determining time on duty, there shall be counted, in addition to the time such employees actually are engaged in or connected with the movement of any train, all time on duty

in other service. Therefore, if an employee is not free to go as he/she chooses after the end of 12 hours, then this is other service for the carrier and is time on duty under the HSA.

4. 49 U.S.C. § 21103(b)(1) states that time on duty ends at the time the employee is *finally released from duty*. Therefore, time on duty continues until the employee reaches his/her designated terminal. It is undisputed that the employees are not finally released from duty while waiting for deadhead transportation, but are only relieved from duty. There are other paperwork functions required of the crew when it reaches the designated terminal, and that is the time that the employee is finally released.

5. The Seventh Circuit failed to recognize that the statute does not require an employee to be actually engaged in operational activities to be considered on duty under the HSA. See §§ 21103(b)(5) and (b)(3). Only one of seven subsections of the Act deals directly with the time that an employee is actually engaged in or connected with the movement of a train.

B. It is undisputed that the HSA is intended to promote safety by preventing mental and physical strain associated with remaining to long at an exacting task. As a remedial statute, the HSA is entitled to liberal construction to serve the humane purposes for which it was adopted.

The Seventh Circuit decision is contrary to the legislative history and the Congressional intent. See H.R. Rep. No. 7641, 59th Cong., 2d Sess. (1907); S. Rep. No. 604, 91st Cong., 1st Sess., Reprinted in 1969 U.S. Code Cong. and Adm. News 1636, 1639; *Hearings on H.R. 8449, H.R. 84, and H.R. 9515, Before the House Committee on Interstate and Foreign Commerce*, 91st Cong., 1st Sess. 29-30, 35, 99-100, 135, 199 (1969)

(Hereinafter *1969 Hearings*); 116 Cong. Rec. H 29,322 (daily ed. Oct. 9, 1969).

The Court should not give deference to the FRA's interpretation of the HSA for a number of reasons:

1. The FRA has previously determined that the time during which a crew is required to remain with a train is time on duty.

2. The FRA has been criticized by the U.S. General Accounting Office, the National Transportation Safety Board, and the Congress for not properly enforcing the railroad safety laws.

3. The FRA has been heavily influenced by the Association of American Railroads in its decision making.

4. The HSA, unlike under all other Federal railroad safety statutes, does not provide the FRA with authority to promulgate regulations.

C. This Court held in interpreting the HSA, that as long as employees are liable to be called upon at any moment and are not at liberty to go away, they are on-duty whether inactive or not.

> They were under orders, liable to be called upon at any moment, and not at liberty to go away. They were none the less on-duty when inactive. Their duty was to stand and wait.

Missouri, Kansas and Texas Railway Company v. United States, 231 U.S. 112, 119 (1913).

United States v. Pennsylvania R.R., 275 F.Supp. 345 (*W.D.Pa. 1967*) is a case brought by the FRA where it sought fines for violation of the HSA because of a crew waiting for deadhead transportation. The court held that if the employee's time is not his own and is being consumed on behalf of the employer at its direction for its presumed benefit, it is time on duty be it activity or relaxation. See also *United Transportation Union v. Skinner, supra*, 975 F.2d at 1426; *United States v. Southern Pacific Co.*, 245 F. 722 (9th Cir. 1917); *Northern Pacific Ry. Co. v. United States*, 220 F. 108, 110 (9th Cir. 1915); *San Pedro, L.A. & S.L. RR. Co. v. United States*, 213 F. 326, 328 (8th Cir. 1914); *United States v. Northern Pacific Ry. Co.*, No. 2635, (W.D. Wash., Feb. 13, 1914) (Unpublished Decision); *U.S. v. Chicago, M. St., P.P., R.R.*, 195 F. 783 (D.C. Wash. 1912).

The Seventh Circuit is the only court that has ever held that time waiting for deadhead transportation should be considered as not time on duty.

Most railroads require crews who are *relieved from duty* to have further responsibilities. As previously discussed, to be *on duty* under the HSA, it is not necessary to be engaged in any operational activities. 49 U.S.C. § 21103(b)(5) and (b)(3). Nevertheless, the operating rules of most railroads in the country require crews who are *relieved* from duty still to have certain responsibilities and duties. The only court in which a full factual record was established is the Oregon district court, where it found that the employee is not free to leave the train and must protect the train from vandalism and undesired movement.

The Seventh Circuit placed significance in the fact that the crew waiting for deadhead transportation would not be operating the train again until he/she receives the required rest under the Act. That limited observation neglects the obvious and common situation in that the worker will not receive rest at usual times, and results in irregularity of work shifts. Experts have concluded that work systems which result in shifts of unusual length and unpredictable work hours, such as a presently employed in the railway industry, place workers and the general public at risk by creating a situation in which the workers ultimately become victims of chronic sleep deprivation. Crew member fatigue has been placed on the NTSB's most wanted list of safety issues in the rail-

road industry, and the Board has found in various accidents that work/rest issues have been critical factors in the cause of accidents.

The FRA, in several studies on the issues related to irregular work hours, excessive work hours, and waiting time has found that sleep records of engineers were irregular and atypical when compared to non-engineers and that the 8 hours off duty after the employee is finally released at the designated terminal seldom translates into more than 4 hours sleep because of the time required to get to a motel and eat, coupled with the fact that sleep will be interrupted by a telephone call 2 hours before the next job starts.

In a study in FRA's Region 2, among the several safety sensitive issues identified were that operating crews may work up to 112 hours in any 7 day week and that 80 to 90 hours work weeks are not extraordinary. The routine of an 8 hour off-duty period in which workers must travel home, eat, bathe, sleep and return to their reporting point may continue for an indefinite number of days without the worker having the legitimate opportunity to have a day off work.

FRA's latest position on this issue pointed out the safety hazards associated with irregular work hours and lack of rest in stating that to the extent that waiting periods are extremely lengthy, current scientific information concerning sleep cycles and the effects of the fatigue on safety-sensitive performance indicates that the waiting periods could contribute to cumulative exhaustion of the employee. (App. 11a-12a).

For all of the above reasons, the decision of the Seventh Circuit should be reversed.

ARGUMENT

I. THE HSA, ITS LEGISLATIVE HISTORY, AND THE ACT'S REMEDIAL PURPOSE ALL SUPPORT THE CONCLUSION THAT COMPULSORY TIME SPENT BY RAILROAD EMPLOYEES WAITING FOR DEADHEAD TRANSPORTATION IS TIME ON DUTY.

A review of the statutory language of the HSA, the interpretation of that language by the Court throughout the Act's 88-year history, the legislative history to the 1969 amendments to the Act, and consideration of the Act's remedial purpose, all support the conclusion that compulsory time spent by railroad employees waiting for deadhead transportation to their point of final release is time on-duty under the HSA.

A. Compulsory Waiting Time Being Time on Duty Is Supported By The Plain Meaning Of The Act.

The provisions of the HSA defining what rules are to apply in determining *time on duty* support the conclusion that all compulsory time spent waiting for deadhead transportation is time on-duty. This is true whether crew members are compelled to oversee their train or not.

It is important to recognize that the HSA encompasses every type of activity or inactivity of a railroad worker—time on duty, time off duty and time spent in deadhead transportation. Congress contemplated every possible period of time between the employee reporting to duty until he/she is *finally* released from duty, and determined that even certain periods when a crew is actually resting at locations other than a designated terminal without any duties whatsoever to perform is time on duty.

There are four provisions of the HSA, discussed below, which lead to this result.

1. The HSA expressly addresses the treatment of *rest periods* at locations other than a designated terminal.

The Act provides that an interim period available for rest at a place other than a designated terminal is time on duty. 49 U.S.C. § 21103(b)(5). Assuming *arguendo* that the railroads' assertion is correct—that crew members are free of all operating responsibilities during the time spent waiting for deadhead transportation—it is clear from the language of § 21103(b)(5) that all waiting time at other than a designated terminal shall be considered time on-duty. If an employee is relieved at other than his/her designated terminal, this is counted as time on duty.

The respondents have attempted to divert attention from the underlying safety issues in this litigation. The railroads' examples of employees being allowed to leave the train and wait at a facility where food is available are rare and definitely not factual. First, crews normally are not allowed to leave a train unprotected. At least one crew member guards the exposed cargo and equipment against vandalism. Second, even assuming *arguendo* that the entire crew was permitted to leave the train, as stated above, Congress still has determined that this is time on-duty.

2. The HSA also delineates what shall be excluded from the definition of time on-duty. The first exclusion from the definition of time on-duty is all time spent in *deadhead transportation* from duty to an employee's point of final release. 49 U.S.C. § 21103(b)(4).

The second exclusion from the definition of time on-duty is all waiting time that occurs as a result of an act of God or major unforeseen equipment failure, and then only if the unforeseen problem occurs at a location with suitable facilities for room and board for the affected crew members. 49 U.S.C. § 21103(b)(7).

The above two exceptions to the definition of time on-duty also support the interpretation that compulsory waiting time is time on-duty. Congress specifically considered

what shall be excluded from the definition of time on-duty, and time waiting for deadhead transportation does not fall within either exception to the definition of time on-duty. The fact that waiting time was not excluded from the definition of time on-duty, except in a narrow context, supports the point that Congress considered this time to be on-duty time.

3. The HSA also contemplates the most common form of waiting time—the situation where crew members are relieved from active operations of the train, yet are still responsible for the safe keeping of the train. In determining time on duty, there shall be counted, in addition to the time such employee is actually engaged in or connected with the movement of any train, all time on duty *in other service* performed for the common carrier during the twenty-four-hour period involved. 49 U.S.C. § 21103(b)(3).

This provision, read in conjunction with the above specified exceptions to the definition of time on-duty, further shows that Congress intended all such waiting time to be on-duty time. Crew members are *in other service* when they are waiting to deadhead back to the point of final release, yet still responsible to the carrier for the safe keeping of the train. As long as the employee is subject to orders of the employer, he/she should be considered "in other service" and thus, *on-duty*.

4. The Act defines time on-duty as ending at the time the employee is *finally released from duty*. 49 U.S.C. § 21103(b)(1). Therefore, time on duty continues until the employee reaches his or her designated terminal, unless the Act provides otherwise. Apparently, respondents contend, that while crew members are awaiting another crew to relieve them, it is not time on-duty because the employee is *relieved* (even though not finally *released*). Such rationale is not accurate by a simple reading of the

language of the statute. Also, as the U.S. District Court for the District of Oregon reasoned:

> . . . to hold otherwise would defeat Congress' intent and result in the anomalous situation whereby an employee would be *on duty* if the period were available for rest but *off duty* where the employee, under the direction and control of the railroad, is waiting for transportation to his or her final point of release.

Brotherhood of Locomotive Engineers v. Skinner, supra, slip op. at 8 (App. at 6a-7a).

5. The Seventh Circuit stated that *the* Act *does not specifically address how time spent by an outlawed crew waiting for deadhead transportation must be categorized.* 44 F.3d at 440. That statement is misleading. While Congress did not specifically use the term *waiting for deadhead transportation* in the HSA, it certainly addressed the issue by the general all inclusive provisions of the Act. For example, interim periods available for rest at other than a designated terminal is time on duty 49 U.S.C. § 21103(b)(5); the compulsory waiting time is not excluded from the definition of time on duty. See 49 U.S.C. § 21103(b)(4) and (7); waiting time may be considered duty *in other service* and therefore on duty time. See 49 U.S.C. § 21103(b)(3); and lastly, a crew remains on duty (unless specifically excluded by the statute) until *finally released from duty* at the designated terminal (not merely *relieved* at some other location). 49 U.S.C. § 21103(b)(1). Congress in 1969 intended to, and did, close all loopholes that previously existed in the HSA. Furthermore, there are a multitude of situations to which a crew may be subjected in a particular tour of duty. It would be impossible to spell each one out legislatively. Rather, general language covering all conceivable types of conditions prevent loopholes from occurring. The railroads, with the assistance of FRA, are attempting to carve out a loophole in the safety statute that doesn't exist and was not intended by Congress.

The Seventh Circuit at 44 F.3d at 443 attempts to support its rationale that waiting time is time-on-duty by referring to three sections in the statute:

a. Section [21101(5)] states that the Act applies only to employees *actually engaged in or connected with the movement of any train* . . .

b. According to Section [21103(b)(1)] of the statute, time-on-duty commences when a crew reports for duty and terminates when a crew is finally released from duty, and

c. Section [21103(b)(3)] specifically states that time on duty is comprised of *time an employee is actually engaged in or connected with the movement of any train.*

Only one subsection of the operative section of the Act, § 21103(b)(2), deals directly with time an employee is actually engaged in or connected with the movement of a train. The remaining six subsections account for other periods of time that Congress required to be considered in determining what is time on or off duty. All words and provisions of statutes are intended to have meaning and are to be given effect, and words of a statute are not to be construed as surplussage. See *Bruce Babbitt, et al. v. Sweet Home Chapter Of Communities For A Great Oregon, et. al.*, 63 U.S.L.W. 4665, 4668 (U.S. June 27, 1995); *United States v. Nordic Village, Inc.*, 503 U.S. 30, 36 (1992); *Hoffman v. Connecticut Dept. of Income Maintainance*, 492 U.S. 96, 103 (1989); *Mountain States Telephone & Telegraph Co. v. Pueblo of Santa Ana*, 472 U.S. 237, 249 (1985); *Reiter v. Sonotone Corp.*, 442 U.S. 330 (1979); *Administrator, Federal Aviation Administration, et al. v. Robertson, et al.*, 422 U.S. 255, 261 (1975); *Wilderness Society v. Morton*, 479 F.2d 842, 856 (D.C. Cir. 1973), *cert. denied*, 411 U.S. 917 (1973).

The Seventh Circuit did not take into consideration several factors. First, an employee who is provided an

interim period of rest at other than a designated terminal is not actually engaged in or connected with the movement of any train, and this is time on duty under Act. The employee is not finally released from duty until he/she actually arrives at the designated terminal (after any deadhead transportation). Also, it is not necessary to be performing any operational service covered by the HSA to be counted as time on duty.

B. The Seventh Circuit's Interpretation Is Contrary To The Legislative History.

The HSA was originally enacted in 1907 to promote safety in the operation of trains by preventing mental and physical strain associated with remaining too long at an exacting task. *Atchison, Topeka & Santa Fe Railroad v. United States*, 269 U.S. 266 (1925); *Chicago & Alton Railroad v. United States*, 247 U.S. 197, 199 (1918). As a remedial statute, the HSA is entitled to liberal construction to serve the humane purposes for which it was adopted. *See Atchison, Topeka & Santa Fe Railroad v. United States*, 244 U.S. 336, 343 (1917).

The House Committee on Interstate and Foreign Commerce, quoting the President of the United States stated:

> The strain, both mental and physical, upon those who are engaged in the movement and operation of railroad trains under modern conditions is perhaps greater than that which exists in any other industry, and if there are any reasons for limiting by law the hours of labor in any employment, they certainly apply with peculiar force to the employment of those upon whose vigilance and alertness in the performance of their duties the safety of all who travel by rail depends.

See H.R. Rep. No. 7641, 59th Cong., 2d Sess. 3 (1907).

The HSA remained largely unchanged until it was amended December 26, 1969. The 1969 amendments to the HSA demonstrate Congress' concern with exactly what

constituted *time off-duty* and *time on duty*. Originally, all time within the twenty-four hour period was considered either *on* or *off* duty, with deadheading time both to and from service generally being *off duty* time. This resulted in flagrant abuses which thwarted the entire purpose of the statute.

> This has resulted in an employee, believe it or not, being assigned to ride 8 hours in deadhead service and not have this time count as time on duty, and then follow it immediately with his official tour of duty, which could run anywhere from 8 to 16 hours, making his total time in railroad service a potential of 24 hours divided between deadheading and non deadheading time.

116 Cong. Rec. H29,322 (daily ed. Oct. 9, 1969) (Statement of Representative Olsen).

The 1969 amendments changed time on-duty (used in computing the maximum 12 hour workday) to include the time that is provided for rest in places other than the designated terminal, time provided for rest of less than 4 hours at a designated terminal, and time spent by employees going to an assignment or traveling between assignments. Time off-duty is also defined, and time spent in deadheading back from a duty assignment is not considered time off-duty. *Id.* at H29,318 (Statement by Representative Staggers). These changes were designed to prevent abuses by ensuring that off-duty time is time of *undisturbed rest* and time on-duty includes time of deadheading to and between service. *Id.* at H29,322. (Statement of Representative Olsen). These clarifications were designed to limit the time required in traveling to duty and to get the employees to designated terminals as quickly as possible after duty.

The legislative history unmistakably supports the conclusion that the time in question is time on-duty and that the Seventh Circuit interpretation is wrong. This very issue was raised in the Hearings on the 1969 amendments to the Hours of Service Act. (*See* 1969 *Hearings*

at 29-30 (1969). In testimony by Al H. Chesser, who represented all of rail labor,[6] he discussed the problems in the old law where employees were *relieved* from duty, but required to remain on the train. (*1969 Hearings* at 30, 99-100). The problem raised by Mr. Chesser was dealt with specifically by Congress in 1969 by requiring that any release time en route for rest at other than a designated terminal is time on-duty. (*See* 49 U.S.C. § 21103(b)(5)). The Seventh Circuit relies on testimony at congressional hearings to the effect that waiting time was never treated as on duty time. 44 F.3d at 444. Simply stated, the Seventh Circuit is wrong. (See *Infra* (16-17, 19). What the Seventh Circuit also fails to acknowledge is that Congress closed any loopholes in 1969. The railroad representatives testified as to their understanding in 1969. In the 1969 *Hearings*, the Association of American Railroads' ("AAR") spokesman, Mr. R.R. Manion, Vice President of the AAR, makes the point absolutely clear. At page 135 of the 1969 Hearings, Mr. Manion testified:

> However, under another provision of H.R. 8449—section 1(b)(3)(A)—periods available for rest "at other than a designated terminal" will be included as time on duty. Consequently, if a crew reaches the hours of service limit in the country and is relieved there, it will still be on duty for hours-of-service purposes because it is not relieved at a designated terminal. In this situation, the railroad will be obliged to violate the law, whatever it does, which, of course, is an absurd result.

[6] The railroads in the Seventh Circuit mistakenly stated that Charles Coughlin was the main union witness for rail labor. See *1969 Hearing* at 7 and *Hearings on S.1938 Before the Senate Subcommittee on Surface Transportation of the Committee on Commerce*, 91st Cong., 1st Sess. 14 (1969). Also, Mr. Coughlin's statements about his understanding of waiting time are clearly refuted by the overwhelming legislative history, case law, and the statements by the railroads representatives—the Association of American Railroads.

Section 1(b)(3)(A) of H.R. 8449 was not changed as urged above by the AAR. Therefore, as stated by the AAR *if a crew reaches the hours of service limit in the country and is relieved there, it will still be on-duty for hours-of-service purposes because it is not relieved at a designated terminal.* (1969 *Hearings* at 135). The very same concern was voiced by the Penn Central Railroad's officials in the 1969 Hearings.

> *In the few cases where it is necessary, because of unusual and unforeseen circumstances, to relieve a crew short of its final terminal . . . I do not see how it is possible under the proposed legislation.* (1969 Hearings at 199).

Congress only allowed the deadhead transportation (i.e. travel time) to the designated terminal to be neither time on-duty nor off-duty.[7]

The Senate Report on the 1969 amendments, adds further support that the time spent by crews on locomotives after the expiration of 11 hours 59 minutes is still on duty.

> Inherent in the calculation of whether an employee is on duty is that of whether the interim periods provided for his rest are such, and at such places as to provide the employee with the proper opportunities and facilities for rest and relaxation from the duties of his occupation. Decisions of the courts have not established a minimum period of release which would constitute a bona fide break in continuity of service in all cases and all circumstances.

S. Rep. No. 604, 91st Cong., 1st Sess., reprinted in 1969 U.S. Code Cong. & Adm. News 1636, 1639. After re-

[7] The only other exception to being on duty time is pursuant to 49 U.S.C. § 21103(b)(7), where there is an act of God, track obstruction, casualty, derailment, or major disabling equipment failure, and that only if the place is where the suitable facilities for food and lodging are available. None of the facts, as relevant here, make the exception applicable.

viewing this legislative history, the Ninth Circuit concluded that:

> Nowhere in the legislative history is it suggested that Congress intended to convert time previously considered time on duty to time off duty, or to weaken the protections afforded the employees and the safety interests that underlie the HSA. Every indication is that the purpose of the amendments was precisely the opposite—to strengthen those rights and interests.

United Transportation Union v. Skinner, supra 975 F.2d at 1428.

Despite respondents representations to the contrary, historically, waiting time has been construed as time on duty. As the Ninth Circuit stated:

> Prior to the enactment of the 1969 amendments, the agency charged with interpreting the HSA (first the Interstate Commerce Commission and then the FRA) consistently construed the phrase "time on duty" to include time spent by railroad employees waiting on stopped trains for the arrival of relief crews or spare parts, on the ground that those employees remained subject to orders issued by the railroad and were not free to leave their posts.

975 F.2d at 1426.

The Seventh Circuit stated that since 1907 the Act had never been construed to require time spent waiting for deadhead transportation as time on duty. 44 F.3d at 440. First of all, that conclusion is not accurate. See e.g., *1969 House Hearings at 35*; Affidavit of J. U. Chrisman, App. at 22a-23a, and affidavit of R. E. Futrell, App. at 14a. Furthermore, the Seventh Circuit didn't acknowledge that FRA in 1966 sought fines in federal court in Pennsylvania for violations of the HSA because of a crew waiting for deadhead transportation. See *United States v. Pennsylvania R.R.*, 275 F. Supp. 345 (W.D. Pa. 1967). The Government's position was that time spent waiting for deadhead transportation by a crew, which had reached its maximum hours of service and been relieved from duty

while still on the train, was on duty time for purposes of the HSA. The court held that time waiting for deadhead transportation was time on duty. Included as part of the hearings record in 1969 was FRA's prior policy statement regarding its interpretation of the law. It does not specifically mention waiting time. However, it made clear that an employee *remains on duty until relieved of all responsibilities and is free to go and do as he pleases. (1969 Hearings at 35).* An employee waiting for deadhead transportation is not relieved of all responsibilities. That does not occur until the employee arrives at the designated terminal and is *finally released* from duty.

Since the adoption of the 1969 amendments, it is debatable what FRA's interpretation has been. As shown by FRA's own senior management personnel (See affidavits of J. U. Chrisman (App. 20a) and R. E. Futtrell (App. 13a)) they considered waiting time as time on duty. FRA refutes those affidavits. Lack of clarity of FRA policy has been a long time problem, and continues to date. In a Focus Group Report dated May 1995, which was prepared for the FRA, responses from FRA's field and regional personnel to various issues were outlined. The lack of consistency in different regions was highlighted. Among the top concerns were that:

- Each of the regions do things differently. There needs to be consistency and standardization between the regions.
- Interpretations vary from inspector to inspector. Make sure everyone is doing the same thing in interpretations.
- Railroads shop around for the answers they want because they get different interpretations.

Focus Group Report at 11 (App. 55a).

FRA's credibility in this litigation leaves a lot to be desired. It has waffled since this dispute arose in 1990. Both the Seventh and the Ninth Circuits refused to give deference to FRA's interpretation of the HSA for differ-

ent reasons. We agree with both courts' conclusions, but for different reasons. FRA should be given little deference in any event because, unlike under all other Federal railroad safety statutes, Congress under HSA has not granted to FRA statutory authority to promulgate regulations. It should be recognized that FRA has been criticized over the years for not properly enforcing the safety laws, and has been heavily influenced by the Association of American Railroads.[8] The FRA has been subject to unprecedented criticism of its safety enforcement program, not only from the public, but from Congress, and government agencies, such as the U.S. General Accounting Office and the National Transportation Safety Board. The GAO has issued 6 such condemning reports within recent years. *See e.g., Railroad Safety: New Approach Needed For Effective FRA Safety Inspection Program*, U.S. General Accounting Office/RECD-90-194 (July 1990); *Railroad Safety: Weaknesses Exist in FRA's Enforcement Program*, U.S. General Accounting Office/RCED-91-72. (March 22, 1991). See also, National *Transportation Safety Board Railroad Accident Report Head-On Collision Between Iowa Interstate Railroad Extra 470 West and Extra 406 East With Release of Hazardous Materials Near Altoona, Iowa* (July 30, 1988), NTSB/RAR-89/04 (July 6, 1989); *National Transportation Safety Board Hazardous Materials Accident Report, Hazardous Materials Release Following the derailment of Baltimore and Ohio Railroad Company Train No. SLFR, Miamisburg, Ohio* (July 8, 1986), NTSB/HZM-87/01 (September 29, 1987), all of which are critical of FRA's enforcement activities.

In its 1991 Report, the GAO examined the adequacy of FRA's enforcement program and concluded that the

[8] It is worth noting that Robert A. Blanchette, a former Administrator of FRA, is currently the Vice President and General Counsel of the Association of American Railroads. Also, on June 27, 1995, in an article in the Washington Post at p. C9, columnist Coleman McCarthy, said "The FRA, with a record of being as cozy as club car poker partners with the railroads. . ."

program *is not effective in ensuring that the nation's railroads comply with Federal Safety regulations.* While the specific aspects of each railroad safety law were not examined separately in the report, it further demonstrates that FRA's interpretation of the HSA should be given little deference by this Court.

C. The Seventh Circuit's Interpretation Is Inconsistent With Case Law.

The Respondents' interpretation is inconsistent with case law precedent. In 1913 the Court held that as long as employees are liable to be called upon at any moment and not at liberty to go away, they are on-duty whether inactive or not.

> . . . they were under orders, liable to be called upon at any moment, and not at liberty to go away. They were none the less on duty when inactive. Their duty was to stand and wait.

Missouri, Kansas, & Texas Railway Company v. United States, 231 U.S. 112, 119 (1913).

Two years prior to the 1969 amendments to HSA, in a decision concerning time waiting for deadhead transportation, a court distinguished between time on-duty and time off-duty by stating the obvious, that off-duty time is *free time*, time an employee is allotted for which he will not be disturbed from his own inclination, be it activity or relaxation. *United States v. Pennsylvania R.R.*, 275 F. Supp. 345 (W.D. Pa. 1967). As long as an employee is subject to the orders of his employer, his time is not his own and is being consumed on behalf of the employer at its direction and for its presumed benefit. *Id.* at 348. (See further discussion of this case, *supra* at 17). Although the 1969 amendments did change the definition of time spent in deadhead transportation by an employee *returning* from duty to his point of final release (*i.e.* neither on nor off duty), it did not change the principle that time spent on the train subject to orders was not

deadhead time. *See also U.S. v. Chicago, M. S. P. & P., R.R.*, 195 F. 783 (D.C. Wash. 1912) where the court held that an employee was on duty when he is at his post in obedience to rules of his superiors, whether actively at work or awaiting orders. Some additional cases which dealt with this issue will further demonstrate that the employees are *on-duty* even after *relieved*.

In *United States v. Northern Pacific Ry. Co.*, No. 2635, W.D. Wash., Feb. 13, 1914, the court said:

> An employee goes on duty . . . He remains on duty while he is in charge of his train, performing service in and about the same, or held responsible for the performance of such service should the occasion therefore arise.
>
> An employee is not off duty until he is relieved from all responsibility as to his train and becomes his own free agent to go and do as he pleases.
>
> . . . .
>
> After an employee in train service starts on his trip he can not be said to be off duty, within the meaning of the law, until he reaches the end of his run, unless before reaching his destination he is released from all service in connection with his train, or from all responsibility therefor should the occasion arise. . . . (slip op. at 7).[9]

Similarly, in *Northern Pacific Ry. Co. v. United States*, 220 F. 108, 110 (9th Cir. 1914) the court stated:

> In the meantime the men were waiting, doing nothing. It is argued that they were not on duty during this period and that if it be deducted, they were not kept more than 16 hours. But they were under orders liable to be called upon at any moment, and not at liberty to go away. They were none the less on duty when inactive. Their duty was to stand and wait.

[9] The decision is not published.

Also, in *San Pedro, L.A. & S.L. RR. Co. v. United States*, 213 F. 326, 328 (8th Cir. 1914) the court pointed out that:

> The length of hours of service has a direct relation to the efficiency of the human agencies upon which protection to life and property necessarily depends . . . If, then, it be assumed, as it must be, that in furtherance of its purpose Congress can limit the hours of labor of employees engaged in interstate transportation, it follows that this power can not be defeated either by prolonging the period of service through other requirements of the carriers or by the commingling of duties relating to interstate and intrastate operations.

In *United States v. Southern Pacific Co.*, 245 F. 722 (9th Cir. 1917), the train crew was released, but was subject to change, and the men were required to hold themselves in readiness to respond to a call, and to be wtihin reach in case their services were needed. The court held that such time was time on duty. The same kind of responsibilities are imposed on crews who are released under the facts of the present litigation. Therefore, such time that employees are relieved from duty, but not finally released, should be held *on duty* time.

The Ninth Circuit in reviewing this case law reasoned:

> Without exception, the lower federal courts followed the Court's lead in holding that waiting time must be included in the calculation of an employee's time on duty in order to effectuate the purpose of the HSA. The basic principle underlying those decisions was that as long as a train crew 'remained the crew of the train,' whether or not 'temporarily relieved,' the crew members were not free to rest in the sense required by the statute (quoting *Northern Pac. Ry.*, 220 F. at 110).

United Transportation Union v. Skinner, supra 975 F.2d at 1426.

In its opinion, the Seventh Circuit discussed its understanding of the status of the case law prior to the 1969 amendments to the Act. 44 F.3d at 444. It disagreed with the analysis by the Ninth Circuit that prior cases held that crews were on duty during the time they spent waiting. The Seventh Circuit attempts to distinguish such cases by stating that those crews had further operational duties to perform. We submit its reasoning is flawed. First, the waiting time is either time-on-duty or not time-on-duty, irrespective of any further operational duties. Secondly, such rationale as dictated by the Seventh Circuit completely ignores the safety purposes of the Act, and the fact that a serious safety issue results from irregular work and sleep hours.

In sum, if Congress intended waiting time to be off-duty time, then they would have overruled the case law precedent at the time of the 1969 amendments to the HSA. Congress never did that, and we submit it intended this historical precedent to remain in force.

II. THE OPERATING RULES OF MOST RAILROADS REQUIRE CREWS WHO ARE "RELIEVED FROM DUTY" TO HAVE FURTHER RESPONSIBILITIES.

As previously discussed to be *on duty* under the HSA, it is not necessary to be engaged in any operational activities. 49 U.S.C. § 21103(b)(5) and (b)(3). Nevertheless, the operating rules of most railroads in the country require crews who are *relieved* from duty to still have certain responsibilities and duties. The only court in which a full factual record was established is the Oregon district court where it found that the employee is not free to leave the train and must protect the train from vandalism and undesired movement. (Slip Op. at 5, App. 4a).

Subjecting the employee to such responsibilities, though they may only require minimal physical activity, has the effect of extending service time beyond the maximum

twelve hour limit. There is no distinction under the HSA as to any particular duty or duties which an employee needs to perform to be considered *on-duty*. Also, while some of these responsibilities are not physically strenuous, they are important to the safe operation of the railroad system and, therefore, having them performed by fatigued employees poses a safety threat to both employees, as well as the public. The FRA has agreed that if an employee performs *passive* duties, that constitutes time on duty. Therefore, application of any one of these operating rules would dictate violations of the HSA even after the crew is allegedly *relieved* from duty.

The railroads contend that these requirements are not regularly imposed. Such statements fly in the face of the specific rules published by the railroads. For example, many railroads require that employees must observe passing trains closely for any defects or unsafe conditions. The petitioners submit such requirements as set out above are imposed at all times. Even if there were no obligations imposed on the crew and it was free to leave the train, the Act is still violated. Interim periods available for rest at other than a designated terminal is time on duty. 49 U.S.C. § 21103(b)(5). This period of time is *interim* because the employee is not finally released from duty. See 49 U.S.C. § 21103(b)(1). The employee is not finally released until he/she arrives at the designated terminal where the employee performs a few ministerial duties.

III. THERE EXISTS A SERIOUS SAFETY ISSUE WHICH IS DIRECTLY IMPACTED BY THE DECISION OF THE SEVENTH CIRCUIT.

There can be no justifiable disagreement that there exists a direct relationship between fatigue and accidents. *See e.g.* H.R. Rep. No. 91-469, 91st Cong., 1st Sess. 6 (1969). Stress in the workplace, resulting from long and irregular work hours, has long been a source of concern

for railway workers, and has recently come to the attention of society at large.

Accidents caused by human error have consistently been a significant portion of the total number of railroad accidents occuring in any given year. Approximately 80% of the railroad accidents investigated by the NTSB over the past 10 years are the result of human error. In the past five years railroad accidents caused by human error consistently have accounted for approximately one-third of all train accidents. Preliminary statistics for 1994 show that 34% of the accidents were caused by human error.

According to Dr. Charles Czeisler, then Director of Circadian and Sleep Disorders Medicine at Brigham and Women's Hospital in Boston, (New York Times, May 15, 1990 at pg. C8) *because their reaction time is affected . . . sleep deprived people may be more prone to making mistakes on the job.* Indeed, sleep researchers indicate that sleepiness is second only to drunkenness as a cause of automobile accidents. The Department of Transportation, in a report to Congress, stated that at least 40,000 traffic accidents a year may be sleep related, and that more than 20% of all drivers have fallen asleep at the wheel. *Id.*

In 1984, Michael K. Coplen, a locomotive engineer in Gillette, Wyoming published an article concerning the effect of sleep habits on shift workers in the Rocky Mountain News, May 21, 1984 at 39. Coplen referred to several industrial accidents (two train accidents and the Three-Mile Island incident) noting that in each case the accidents occurred between the hours of 3 a.m. and 5 a.m. which, according to several researchers, is the lowest point in our daily cycle of alertness. In addition, Coplen cited an analysis of a fatal crash of a United Airlines plane near Salt Lake City in 1977, where the author concluded that *fatigue caused by frequently changing shift work schedules . . . fostered a series of errors that compounded into a fatal crash.*

The Seventh Circuit placed significance in the fact that the crew waiting for deadhead transportation would not be operating the train again until he/she receives the required rest under the Act. 44 F.3d at 444. That limited observation neglects the obvious and common situation in that the worker will not receive rest at usual times and results in irregularity of work shifts.

In the testimony of Dr. Donald I. Tepas, who testified as an expert at the May 12, 1988 hearing by the National Transportation Safety Board regarding the fatal head-on collision of two Conrail trains at Thompsontown, Pennsylvania on January 14, 1988, he noted regularity of work shifts is indeed of great concern in the railroad industry. At the time, Dr. Tepas was a Professor of Psychology and Director of the graduate program in Industrial and Organizational Psychology at the University of Connecticut. Dr. Tepas also served as the U.S. representative on the Scientific Committee on Night and Shift Work of the International Commission on Occupational Health. According to Dr. Tepas, work systems which result in night work, shifts of unusual length, and unpredictable work hours, such as are presently employed by the railway industry, place workers and the general public at risk by creating a situation in which the workers ultimately become victims of chronic sleep deprivation. *NTSB Hearings on Head-End Collision of Consolidated Rail Corporation Freight Trains UBT-506 and TV-61 Near Thompsontown, Pennsylvania, January 14, 1988,* at 1622.

Dr. Tepas' studies on the effect of sleep deprivation and unpredictable and irregular work/rest cycles were summarized in the *National Transportation Safety Board Railroad Accident Report, Head-End Collision of Consolidated Rail Corporation Freight Trains UBT-506 and TV-61 Near Thompsontown, Pennsylvania, January 14, 1988, NTSB/RAR-89/02, (1989)* (Hereinafter "NTSB Report"). According to Dr. Tepas, workers do not remedy this hazardous condition by making up for lost sleep on their

days off, nor do they adapt to the irregular work hours. Dr. Tepas testified that chronic sleep deprivation results in fatigue, frequent microsleeps or lapses (periods in which workers fall asleep for a short time then awaken spontaneously, unaware that they had been sleeping at all). *NTSB Report*, at 37. Dr. Tepas notes that the frequency and duration of such lapses increase as the person becomes more chronically sleep-deprived. *Id.* Although the worker will perform his task perfectly both before and after the lapse, he is asleep during it. As a result, the worker will not respond at all to external stimuli unless they are massively sensory in nature, very unusual, or particularly meaningful. *Id.*

Also, Dr. Tepas stated that workers subject to non-systemic and unpredictable changes in their work schedules are highly susceptible to variation in alertness and consciousness that are associated with their circadian "body-clock", which is typically at its lowest ebb between roughly 1 a.m. and 7 a.m. He said that workers suffering from the effects of chronic sleep deprivation are more susceptible to environmental conditions which promote sleep. Extensive studies have been conducted on operating crews in which, not only single crew members, but on some occasions, entire crews have fallen asleep while performing their jobs. *Id.*

Based upon the NTSB's analysis of the Thompsontown accident and other prior accidents it concluded:

> 17. The changing nature of railroad operations and competitive factors have materially increased the relative number of train crew members who must work irregular and unpredictable shifts on a long-term basis.
>
> 18. Since train crew members lack the requisite training to recognize the condition, they may allow themselves to become chronically sleep-deprived and develop physiological problems that impact adversely on their performance. Conrail and the other railroads need to recognize and deal with this probability by modifying their operations to reduce shift irregularity and by instituting educational and intensified medical programs.

NTSB Report at 53.

Unpredictable work/rest cycles of the crew was cited by the NTSB as one of the causes of the Thompsontown accident. (*NTSB Report* at 54).

As pointed out by the former Chairman of the NTSB, James L. Kolstad, in testimony on February 19, 1991 before the House Subcommittee on Transportation and Related Agencies, Committee on Appropriations, concerning both the August 9 and November 7, 1990, railroad accidents at Sugar Valley, Georgia and Corona, California, work/rest cycles of railroad crew members is a concern. He said that crew member fatigue has been placed on the NTSB's *Most Wanted* list of safety issues. *Hearings on Department of Transportation and Related Agencies Appropriations for 1992 Before the House Subcommittee on the Department of Transportation and Related Agencies Appropriations of the Committee on Appropriations*, 102nd Cong., 1st Sess. 35 (1991).

Again, on June 12, 1991, Mr. Kolstad testified on the Railroad Safety Programs before the House Subcommittee on Transportation and Hazardous Materials, Committee on Energy and Commerce, where he stated:

> Human performance is still the most important factor in any accident, in any mode of transportation. An operator who is inattentive, for whatever reason, can expect to find himself in an accident sooner or later. Too often, that inattention is caused by fatigue.
>
> Railroad employees, especially train crews, are confronted by very unpredictable and tiring work schedules—a situation that has not changed since the beginning of railroading. The changing nature

> of railroad operations and competitive factors have increased the relative numbers of crewmembers and others in safety sensitive positions who must work irregular and unpredictable shifts—often on a long term basis.

Hearings on Railroad Safety Programs, Before the House Subcommittee on Transportation And Hazardous Materials of the Committee on Energy and Commerce, 102nd Cong., 1st Sess. 167 (1991).

He also said that *we have found in accident after accident that workload and work/rest issues have been critical factors. Id.*

The NTSB's Report of the Corona, California accident of November 7, 1990, also demonstrates the hazards in railroad operations resulting from irregularity and unpredictability of a train crew's work schedule. The Board concluded that both of the locomotive crew members had fallen asleep because of acute fatigue, partly resulting from the irregularity and unpredictability of the work schedule. *(National Transportation Safety Board Railroad Accident Report, Atchison, Topeka and Santa Fe Railway Company (ATSF) Freight Trains ATSF 818 and ATSF 891 on the ATSF Railway Corona, California (November 9, 1990)* RAR-91/103 at p. 45 (July 23, 1991).

Further support of the adverse safety effects of irregular work cycle is contained in *Biological Rhythms, Sleep and Performance,* by Wise B. Webb at pp. 59-87, 110-141, 175-204 (John Wiley & Sons 1982); and testimony of Dr. Charles Czeisler at the *Hearings on Shift Work Scheduling and Biological Clocks Before the House Subcommittee on Investigations and Oversight of the Committee on Science and Technology,* 98th Cong., 1st Sess. 176 (1983).

The FRA itself has undertaken several studies of the issues related to irregular work hours, excessive work

hours, and waiting time, on February 1991 and June 1992. See *Issues in Locomotive Crew Management and Scheduling,* U.S. Department of Transportation, Federal Railroad Administration DOT/FRA/RRP-91-01 and DOT-VNTSC-FRA-91-1 (February, 1991), (App. 25a) and *Engineman Stress and Fatigue: Pilot Tests,* U.S. Department of Transportation, Federal Railroad Administration, DOT/FRA/ORD-92-17 (June, 1992) (App. 46a). In the earlier study the findings were that: (1) Two of the three focus groups involved in the study cited unpredictable working hours as the most important single cause of stress and fatigue; (2) Many participants noted that sleep was often taken at times and in amounts which were inappropriate to the hours-on-duty which followed. Otherwise the employee would hardly ever be able to participate in family activities; (3) In the first focus group the railroad's train scheduling system is sufficiently advanced to provide 8 hours advance notice of jobs about 90% of the time; (4) Eight hours off duty seldom translates into more than four hours sleep because of the time required to get to a motel and eat, coupled with the fact that sleep will be interrupted by a telephone call two hours before the next job starts. (App. 43a).

In the second FRA study, some of the findings showed that: (1) during the course of the experiment subjects tended to doze off, presenting the possibility of serious performance errors; and that (2) the sleep records of engineers were irregular and atypical when compared with non-engineers. (App. 48a, 51a-52a).

In another study by the FRA in Region 2, dated November 1994, the FRA identified several safety sensitive issues, which it determined would reduce the potential for train accidents. These issues were:

> Under the present limitations of the Hours of Service Act, railroad employees engaged in or connected with the movement of trains (train and engine crews)

may work up to 112 hours in any seven day week. Although FRA does not believe that many workers reach this total, it does believe that 80 to 90 hour work weeks are not extraordinary.

Under the law, after a tour of duty of up to 11 hours and 59 minutes, train crews must be given an eight hour off duty period. Within this time frame, workers must travel home, eat, bathe, sleep, and return to their reporting point. This routine may continue for an indefinite number of days without the worker having the legitimate opportunity to have a day off work. FRA believes that many employees are seriously fatigued. Conrail recognizes the problem but may often be faced with the option of granting workers a day off at a cost of annulling guaranteed service trains.

FRA also notes that Conrail has been conspicuously unsuccessful at limiting worker's hours of duty to the twelve hours prescribed by law. Over 75 percent of the violations filed by FRA inspectors in Ohio have occurred on Conrail. FRA Region 2 is responsible for enforcement across a territory that covers all or part of five Conrail Divisions. More than one-half of the violations filed in the Region against Conrail have involved the Dearborn or Pittsburgh Divisions. While almost all of this excess service involves waiting for transportation rather than operating trains, FRA believes that other railroads in OHIO, and other divisions on Conrail have more successfully addressed the problem.

Ohio Rail Safety Initiative, United States Department of Transportation, Federal Railroad Administration, Office of Safety, Region 2, at 7 (November 1994) (App. 56a-57a).

Finally, even the FRA, in its latest position on this overall issue, pointed out the safety hazards associated with irregular work hours and lack of rest.

> FRA has long been concerned about instances in which employees are held on trains for several hours while awaiting the arrival of deadhead transportation in the absence of any valid emergency that might explain such an occurrence. To the extent that the waiting periods are extremely lengthy, current scientific information concerning sleep cycles and the effects of fatigue on safety-sensitive performance indicates that the waiting periods could contribute to the cumulative exhaustion of the employee. This cumulative exhaustion could occur even though the employee receives the legally required rest period upon arrival at the point of final release.

App. 11a-12a.

CONCLUSION

Based upon the serious consequences to safe railroad operations that arise from the opinion of the Seventh Circuit in acting contrary to case law, the HSA's historical application, its legislative history, and its remedial purpose, the decision below should be reversed.

Respectfully submitted,

Of Counsel:
HAROLD A. ROSS
General Counsel
BROTHERHOOD OF LOCOMOTIVE ENGINEERS
1548 Standard Building
1370 Ontario Street
Cleveland, Ohio 44113
(216) 861-1313

CLINTON J. MILLER, III
General Counsel
UNITED TRANSPORTATION UNION
14600 Detroit Avenue
Cleveland, Ohio 44107
(216) 228-9400

LAWRENCE M. MANN *
ALPER & MANN, P.C.
400 N. Capitol Street, N.W.
Suite 851
Washington, D.C. 20001
(202) 298-9191
Counsel for Petitioners

August 3, 1995

* Counsel of Record

APPENDICES

APPENDIX A

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF OREGON

Civ. No. 90-51-JU

BROTHERHOOD OF LOCOMOTIVE ENGINEERS, *et al.*,
Plaintiffs,

v.

SAMUEL K. SKINNER,
SECRETARY OF TRANSPORTATION, *et al.*,
Defendant.

LAWRENCE M. MANN
Suite 851
400 N. Capital St., N.W.
Washington, D.C. 20001

MONTE BRICKER
Suite 1300
621 S.W. Morrison
Portland, OR 97205

Attorneys for Plaintiffs.

CHARLES H. TURNER
U S. Attorney
RILEY J. ATKINS
Assistant U.S. Attorney
888 S.W. Fifth Avenue
Suite 1000
Portland, OR 97204-2024

Attorneys for Defendants.

OPINION

MARSH, Judge.

This is an action arising under the Hours of Service Act, 45 U.S.C. §§ 61-66. The Hours of Service Act limits the hours of work of employees engaged in duties related to the safe operations of trains and mandates certain off-duty periods. Plaintiffs, locomotive engineers, seek judgment declaring that defendants have misinterpreted the Act's definition of "time on duty" set forth in section 61(b)(3) through their exclusion of time spent waiting for deadhead transportation from a duty assignment to the engineer's final point of release.

On January 31, 1991, Magistrate George E. Juba filed his Findings and Recommendation in this action in which he recommended granting defendants' motion for summary judgment and denying plaintiffs' summary judgment motion. The matter is now before me pursuant to 28 U.S.C. § 636(b)(1)(B) and Fed. R. Civ. P. 72(b). When either party objects to any portion of the Magistrate's Findings and Recommendation, the district court must make a *de novo* determination of that portion of the Magistrate's report. *See* 28 U.S.C. § 636(b)(1)(C); *McDonnell Douglas Corp. v. Commodore Business Machines, Inc.*, 656 F.2d 1309, 1313 (9th Cir. 1981), *cert. denied*, 455 U.S. 920 (1982). Plaintiffs have filed timely objections. I have, therefore, given the file of this case a *de novo* review and have heard oral argument on the matter. For the reasons set forth below, I do not adopt Magistrate Juba's Findings and Recommendation.

DISCUSSION

Section 61(b)(3) of the Act defines time on duty as follows:

> Time on duty shall commence when an employee reports for duty and terminate when the employee is finally released from duty, and shall include:
>
> (A) Interim periods available for rest at other than a designated terminal;

> (B) Interim periods available for less than four hours rest at a designated terminal;
>
> (C) Time spent in deadhead transportation by an employee to a duty assignment: *Provided*, That time spent in deadhead transportation by an employee from duty to his point of final release shall not be counted in computing time off duty;
>
> (D) The time an employee is actually engaged in or connected with the movement of any train; and
>
> (E) Such period of time as is otherwise provided by this chapter.

The Act provides that it shall be unlawful for any railroad subject to the Act to require an employee who has been on duty for 12 hours to continue on duty until he or she has had at least 10 hours off duty or to require an employee to continue or to go on duty when he or she has not had at least eight consecutive hours off duty during the preceding 24 hours. 45 U.S.C. § 62.

The provisions relating to deadhead transportation—time spent by employees going to or from an assignment or travelling between assignments—were the result of 1969 amendments to the Act. The 1969 amendments also expanded time on duty to include time that is provided for rest in places other than the designated terminal or for less than four hours at a designated terminal in an effort to ensure that off duty time is available for "undisturbed rest." 116 Cong. Rec. H29.322 (daily ed. Oct. 9, 1969) (Statement of Representative Olsen).

The issue presented here is one of first impression and concerns whether time spent waiting for deadhead transportation from duty to the point of final release constitutes time "on duty" or time "off duty" under the Act as amended. In response to a request for clarification from plaintiffs, the Federal Railroad Administration ("FRA"), an agency of the Department of Transportation, interpreted time spent waiting for deadhead trans-

portation as "limbo time"—"neither time on duty nor time off duty." The FRA noted that where an employee waiting for deadhead transportation is required to perform service of any kind for the railroad, he or she would be considered on duty until all such duties were completed. In concluding that both the time spent waiting for deadhead transportation and the actual time spent in deadhead transportation constitute "limbo" time, the FRA emphasized that to hold otherwise would encourage employers to assign employees work during this waiting period contrary to Congress' intent.

Plaintiffs seek a declaration that the time an "employee remains on a train under the direction and control of the railroad while awaiting transportation to the point of final release" constitutes time "on duty." Plaintiffs concede that time spent in deadhead transportation from duty does not constitute time "on duty" based on the statute's treatment of deadhead transportation in section 61(b)(3)(C). With respect to time spent waiting for deadhead transportation, plaintiffs emphasize that the Act clearly defines "time on duty" as ending at the time the employee is "finally released from duty." Plaintiffs claim that this means that "time on duty" continues until the employee reaches his or her designated terminal unless the Act provides otherwise as it does with deadhead transportation from duty in section 61(b)(3)(C). Plaintiffs emphasize, and defendants do not dispute, that while waiting for deadhead transportation from duty, the employee is not free to leave the train and must protect the train from vandalism and undesired movement. Plaintiffs also emphasize that the phrase "time spent in deadhead transportation" is well recognized as including only the time that an employee is actually moving. *See* Hearings on H.R. 8449, H.R. 84, and H.R. 9515, Before the House Committee on Interstate and Foreign Commerce, 91st Cong., 1st Sess. 29-30 at 134 (1969) (testimony of R.R. Manion, Vice President of the Association of American Railroads, defining deadheading as "travel performed by railroad"); S. Rep. No. 604, 91st Cong., 1st Sess., reprinted in 1969 U.S. Code and Cong. & Adm. News 1636, 1640-41 ("[t]he phrase 'deadhead transportation to duty assignment' in section 1(b)(3)(C) is intended to mean *that time spent traveling* by the employee calculated from the time he reports for duty until he reaches his duty assignment") (emphasis added). In the alternative, plaintiffs argue that time spent waiting for deadhead transportation from a duty assignment is "on duty" time because it constitutes "interim periods available for rest at other than a designated terminal" and is therefore covered by section 61(b)(3)(A) of the Act.

The purpose of the Hours of Service Act is "to promote safety in operating trains by preventing the excessive mental and physical strain which results from remaining too long at an exacting task." *Chicago & A.R. Co. v. United States*, 247 U.S. 197, 199-200 (1918). The legislation was enacted based on a recognition of "the many casualties in railroad transportation which resulted from requiring the discharge of arduous duties by tired and exhausted men [and women] whose power of service and energy had been so weakened by overwork as to render them inattentive to duty or incapable of discharging the responsible labors of their positions." *Atchinson R.R. v. United States*, 244 U.S. 336 (1917). Based on the recognition that the Act is "remedial and in the public interest," the Supreme Court has emphasized that the Act should be liberally construed "in the light of its humane purpose." *Id.*; *accord United States v. Atlantic Coast Line R.R.*, 153 F.2d 243 (4th Cir. 1946) (the Act is "intended to protect the employee, the employer, and the public and to this end must be liberally construed").

While deadhead transportation both to and from service was generally considered "off duty" time prior to the 1969 amendments, employees were treated as on duty even though inactive, "waiting, doing nothing," where, as here, they were "under orders, liable to be called upon at any moment, and not at liberty to go away."

Missouri K & T Ry. v. United States, 231 U.S. 112, 119 (1913); *accord See United States v. Southern Pacific Co.*, 245 F. 722 (9th Cir. 1917); *Northern Pacific Ry. v. United States*, 220 F. 108, 110 (9th Cir. 1915); *San Pedro L.A. & S.L.R.R. v. United States*, 213 F. 326, 328 (8th Cir. 1914); *United States v. Pennsylvania R.R.*, 275 F.Supp. 345, 348 (W.D. Pa. 1967). Defendants contend that these precedents are no longer good authority because they were decided prior to the 1969 amendments to the Act and therefore involved situations where the only interpretation possible was a finding that the employee was either "on duty" or "off duty."

The parties agree that deadhead transportation from duty is exempted from the definition of "on duty" based on the Act's reference to time spent in deadhead transportation "from duty to his [or her] point of final release . . . not be[ing] counted in computing time off duty." No reference is made to time merely spent waiting for deadhead transportation from duty to the point of final release. Having reviewed the record, I find that, based on section 61(b)(3)'s wide definition of "time on duty," prior caselaw, the legislative history of the 1969 amendments, and the purpose of the Act, the time an employee remains on a train under the direction and control of the railroad while waiting for transportation to his or her point of final release constitutes time "on duty." I find no basis for concluding, as defendants suggest, that Congress intended to overturn prior judicial holdings that time spent waiting constitutes time on duty. Rather, I find that Congress intended time spent waiting for deadhead transportation to fall within the general statutory definition of time on duty which commences "when an employee reports for duty and terminate[s] when the employee is finally released from duty." 45 U.S.C. § 61(b)(3). Section 61(b)(3)(C)'s reference to deadhead transportation from duty is limited to the actual time spent travelling to the final point of release. To hold otherwise would defeat Congress' intent and result

in the anomalous situation whereby an employee would be "on duty" if the period were available for rest but "off duty" where the employee, under the direction and control of the railroad, is waiting for transportation to his or her final point of release. Accordingly, giving due deference to the FRA's interpretation of the Act, I find that the agency's interpretation was not "based on a permissible construction of the statute." *Chevron v. U.S.A., Inc. v. Natural Resources Defense Council, Inc. et al.*, 467 U.S. 837, 842-43 (1984). Plaintiff's motion for judgment is granted.

CONCLUSION

For the reasons set forth above, plaintiff's motion for summary judgment is granted and defendant's motion for summary judgment is denied.

DATED this 30th day of May, 1991.

/s/ Malcolm F. Marsh
MALCOLM F. MARSH
United States District Judge

APPENDIX B

[Logo]

U.S. Department
of Transportation

Federal Railroad
Administration

BY HAND

Robert W. Blanchette, Esq.
Vice President-Law and General Counsel
Association of American Railroads
American Railroads Building
50 F Street, N.W.
Washington, D.C. 20001

Dear Mr. Blanchette:

As you are aware, on December 29, 1994, the United States Court of Appeals for the Seventh Circuit issued a decision in the case of *Atchison, Topeka, and Santa Fe Railway Co.* v. *Peña* (Nos. 93-1505, 93-2378, and 93-2712) (*en banc*).[1] This case concerns the Federal Railroad Administration's (FRA) interpretation of the Federal hours of service laws as they pertain to the status of train crewmembers waiting for the arrival of deadhead transportation to their point of final release. In response to the legal challenges filed in 1993 by nine major railroads, the Seventh Circuit Court of Appeals, sitting *en banc*, ruled unanimously against FRA and held that time spent waiting for transportation to a designated terminal by a train crew that has been relieved of all operating duties of the train to which it is assigned is *not* time on duty, but rather "limbo time" (*i.e., neither on- nor off-duty time*). Slip opinion at page 13.

[1] The Seventh Circuit is comprised of Illinois, Indiana, and Wisconsin.

The Seventh Circuit's holding coincided with the position that FRA had traditionally taken until the agency changed its interpretation in late 1992. Prior to that change, FRA had considered an employee to be on duty during the time spent waiting for the arrival of the deadhead vehicle *only* if the employee actually had duties to perform. If the railroad had relieved the employee of all responsibility, FRA had considered such time spent merely waiting for the deadhead vehicle to arrive as limbo time for hours of service purposes.

However, on September 22, 1992, in response to lawsuits filed by the United Transportation Union and the Brotherhood of Locomotive Engineers, a three-judge panel of the United States Court of Appeals for the Ninth Circuit held that such time spent waiting for transportation is to be considered on-duty time. *United Transportation Union* v. *Skinner*, 975 F.2d 1421 (9th Cir. 1992).[2] Although FRA disagreed with the Ninth Circuit's legal rationale, FRA recognized both the ambiguity of the Federal hours of service laws' pertinent provisions and the reasonableness of the court's ultimate conclusion as to the proper reading of those provisions. Accordingly, in the interest of uniform application of the Federal hours of service laws and to promote the safety of railroad operations, FRA decided to treat the Ninth Circuit's opinion as binding throughout the entire nation.

FRA has always believed that both the Ninth Circuit's interpretation of the relevant hours of service provisions, and what became the Seventh Circuit's interpretation, were reasonable. While FRA adopted the Ninth Circuit's interpretation primarily to achieve national uniformity, the decision of the Seventh Circuit has now made this goal impossible to achieve unless and until the United States

[2] The Ninth Circuit, of course, includes Alaska, Arizona, California, Guam, Hawaii, Idaho, Montana, Nevada, Oregon, and Washington.

Supreme Court resolves the split between the circuit courts. Moreover, upon review of the Seventh Circuit's unanimous, *en banc* decision, FRA concludes that the Seventh Circuit's reading of the pertinent hours of service provisions is better reasoned than the decision of the Ninth Circuit.

Accordingly, FRA has decided to adopt the Seventh Circuit's decision as its own view in every state in the nation located *outside* of the jurisdiction of the Seventh and Ninth Circuits, beginning at 12:01 a.m. on March 6, 1995.[3] FRA has chosen March 6 because it will allow sufficient time for FRA to notify its field inspectors and the regulated community of FRA's revised interpretation. FRA also believes that by selecting one uniform date for the remaining implementation of its revised interpretation the impact on both FRA and the regulated community will be kept to a minimum.

This means that *effective on March 6,* FRA will treat an employee merely required to remain on a train (at a location outside of the territory of the Ninth Circuit), while awaiting the arrival of deadhead transportation to a point of final release, as neither on nor off duty; the employee's status most closely resembles, and is part and parcel of, deadheading from duty. However, as FRA stressed in its August 4, 1989 letter (copy enclosed) to Mr. Lawrence Mann, counsel for the rail labor unions, if an employee is required to perform service of any kind during that period (*e.g.*, protecting the train against vandalism, observing passing trains for any defects or unsafe conditions, flagging, shutting down locomotives or checking fluid levels, or communicating train consist information via radio), he or she will be considered as on

[3] However, since the Seventh Circuit issued the mandate in its decision on February 27, 1995, *see* Fed. R. App. P. 41, FRA began applying the revised interpretation inside the jurisdiction of the Seventh Circuit effective at 12:01 a.m. on that date.

duty until all such service is completed. The Seventh Circuit's holding did not address the situation in which a crew that has expired under the Federal hours of service laws is called upon to perform nonoperational duties (*i.e.*, commingled duties) while it waits for the arrival of the deadhead vehicle after the expiration of the maximum 12 hours. However, in a footnote, the court made clear that "the statute accounts for that circumstance" by treating such time as time on duty. Slip opinion at page 10, footnote 4; *see* 49 U.S.C. § 21103. Of course, where a railroad's operating rules clearly relieve employees of all duties during the waiting period and no duties are specifically assigned, the waiting time will be considered limbo time.

Although it is FRA's expectation that the split between the Ninth and Seventh Circuits concerning their differing interpretations of the Federal hours of service laws will eventually be resolved by the United States Supreme Court, pending such resolution, FRA will, out of deference to the court of jurisdiction, continue to treat time spent merely waiting for the arrival of deadhead transportation to the point of final release as time on duty *when it occurs within the territory of the Ninth Circuit.* FRA will therefore expect affected railroads to record such time as time on duty and file reports of excess service, as necessary, under 49 C.F.R. Part 228.[4]

FRA has long been concerned about instances in which employees are held on trains for several hours while awaiting the arrival of deadhead transportation in the absence of any valid emergency that might explain such an occurrence. To the extent that the waiting periods are extremely lengthy, current scientific information concerning sleep

[4] Although time spent awaiting the arrival of deadhead transportation will still constitute time on duty within the territory of the Ninth Circuit, FRA will continue to exercise its prosecutorial discretion in deciding which cases warrant civil penalties.

cycles and the effects of fatigue on safety-sensitive performance indicates that the waiting periods could contribute to the cumulative exhaustion of the employee. This cumulative exhaustion could occur even though the employee receives the legally required rest period upon arrival at the point of final release. Accordingly, it is FRA's expectation that the railroads will voluntarily employ their best efforts to minimize the time that employees spend waiting for the arrival of deadhead transportation throughout the remainder of the United States.

We would appreciate your making this letter known to your member railroads. In due course, we will amend Appendix A to 49 C.F.R. Part 228 in accordance with the views stated herein.

/s/ S. Mark Lindsey
S. MARK LINDSEY
Chief Counsel

Enclosure

cc: Ronald M. Johnson, Esq.
Mark V. Holden, Esq.
Akin, Gump, Strauss, Hauer & Feld, L.P.P.
1333 New Hampshire Avenue, N.W.
Washington, D.C. 20036

Lawrence M. Mann, Esq.
Alper & Mann, P.C.
400 North Capitol Street, N.W., Suite 851
Washington, D.C. 20001

Alice Saylor, Esq.
Vice President & General Counsel
The American Short Line Railroad Association
1120 G Street, N.W., Suite 520
Washington, D.C. 20005

APPENDIX C

LAWRENCE M. MANN
ALPER & MANN
Suite 851
400 North Capitol Street, N. W.
Washington, D. C. 20001

MONTE BRICKER
BRICKER, ZAKOVICS & QUERIN, P.C.
1200 Wilcox Building
506 S.W. Sixth Avenue
Portland, Oregon 97204-1590

Attorneys for Plaintiff

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF OREGON

Civil Action No. 90-51-JU

BROTHERHOOD OF LOCOMOTIVE ENGINEERS,
Plaintiff,

v.

SAMUEL K. SKINNER, *et al.*,
Defendants.

County of Los Angeles)
State of California) ss:

AFFIDAVIT OF R.E. FUTRELL

1. My name is R.E. Futrell. I reside at 5132 Hickory Circle, Cypress, California 90630. I am currently employed as a Associate Transportation Operations Supervisor for the California Public Utilities Commission.

Between 1974-1981, I was employed for 7 years as a FRA safety inspector in Region 7, which includes California. From 1981-1984 I was the District Supervisor for the FRA. I was responsible for supervisory direction of 18 safety inspectors at 5 FRA district offices in California, Utah, Nevada and Arizona.

2. As part of my duties at FRA, I inspected the railroads for violation of the Hours of Service Act. During this time I processed many cases where crews were required to remain on a train after being on duty 12 hours. My instructions from the FRA were to file violation reports in cases where the crew was not free to leave the train at 12 hours. I also discovered during my investigations that not only were the crews not permitted to leave the train until another crew arrived, but also if the employee became aware that vandals had released the train's hand brakes, corrective action by the crew would be necessary in order to prevent any undesired movement. Additionally, it was expected that if an employee noted train vandalism or passing trains with defects, the crew would promptly inform the railroad.

3. A common example of the kind of violations which I discovered and was enforced by FRA is shown by Attachment 1. As significant to this lawsuit, the crew there was not permitted to leave the train after 12 hours, and remained 3½ hours after expiration of the legal limit. Mr. J.W. Walsh, Associate Administrator for Safety at FRA forwarded the violation report to the Chief Counsel's Office for imposition of a fine. In doing so Mr. Walsh by letter informed the union the "It is our opinion that the time during which this crew was required to remain with the train should be considered as on-duty time."

4. As part of my duties as District Supervisor for FRA, I supervised the safety enforcement by the safety inspectors under my jurisdiction. This included Hours of Service Act violations.

5. Between 1964 and 1974 and from 1985-1990 I was employed in by the Southern Pacific Transportation Company in both train and yard service, and promoted to conductor in 1969. In that position it was not uncommon for me to be required by the railroad to remain on the train after expiration of the 12 hours limit until relieved by another crew. Our crew was then responsible for protecting the train against vandalism, if we became aware of it, protecting the train from undesired movement should vandals tamper with the hand brakes, and to notify proper personnel if we noted a passing train with defects.

6. Also, until recently, I was Local Chairman of Local 1846, United Transportation Union. As such I have personal knowledge of disciplinary proceedings on the Southern Pacific Transportation Company and the requirements imposed on crews by the railroad. I believe that a crew could be disciplined in each of the following examples: (a) If the crew left the train without permission after going on duty 12 hours before, unless it is first relieved by another crew; (b) If the train is vandalized and the crew was aware and did not attempt to protect it; (c) If the brakes leaked off and caused an undesired movement, particularly if an accident occurred as a result; (d) If the crew observed an obvious defect on a passing train and did not promptly inform the railroad.

7. Also in my capacity as local chairman, I am familiar with many instances where crews are required to remain on the trains more than 12 hours after going on duty. It was not uncommon in the past for the crew to remain on the train at least several additional hours and have the same responsibilities as I described in #5.

Further affiant sayeth naught.

/s/ R. E. Futrell
R. E. FUTRELL

Subscribed and sworn to before me a Notary Public this 1st day of October 1990.

/s/ Sharon C. Yeo
Notary Public

My Commission Expires: 8-21-92 [Seal]

APPENDIX D

IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF OREGON

Civil Action No. 90-51-JU

BROTHERHOOD OF LOCOMOTIVE ENGINEERS,
Plaintiff

v.

SAMUEL K. SKINNER, *et al.*,
Defendants

County of Cuyahoga)
State of Ohio) ss.

AFFIDAVIT OF C.E. ANDERSON

1. My name is C.E. Anderson. I am a locomotive engineer and I am employed by the Brotherhood of Locomotive engineers with its principal headquarters located at 1370 Ontario Street, Cleveland, Ohio.

2. As part of my official duties I receive complaints of violations of the Hours of Service Act from the BLE members throughout the country, and I coordinate the processing of the complaints with the FRA.

3. During the past few years I have forwarded to Washington, D.C. numerous violations of the HSA as they relate to employees remaining on trains after the expiration of 12 hours from the time they went on duty.

4. Typically these complaints demonstrate facts whereby employees are required to remain on trains several hours and sometimes up to 10 hours after expiration of the 12

hours from the time the crew went on duty. Representative examples of some of these instances are attached hereto collectively as Attachment A.

5. Only rarely is the crew free to leave the train upon reaching the 12 hours limit. The crew may leave the train only after arrival of another crew to relieve it. Also, the crew must await any further instruction from the railroad.

6. The employee must comply with the Raiload's General Code of Operating Rules. At the very least the crew is not permitted to leave the train unattended, and must protect against vandalism. In addition, the crew must await any further instructions from the railroad. Also, as part of an employee's general duties, he/she observes passing trains for any obvious defects and reports them to the railroad. Finally, the crew must keep brakes properly set so that there will not be an unintended movement of the train.

7. If the employee left the train without specific permission, he/she would be disciplined (possibly fired) by the railroad. The crew would also be disciplined if the train is vandalized and the crew took no action to prevent it, if the brakes did not remain set properly and the train moved without permission, or if the crew observed a defect on a passing train and did not inform the railroad officials promptly.

8. A railroad can easily eliminate the problem of excessive hours on duty. All that a railroad needs to do is to plan in advance to have a crew ready to relieve the crew on the train, and to have transportation waiting to transport the crew to the point of final release. The railroad can obtain advance notice simply by following the train movements, knowing thereby whether the crew on the train will reach the 12 hour limit. Furthermore, the limit is usually reached in relatively close proximity to the point of final release—the designated terminal.

Further affiant sayeth naught.

/s/ C.E. Anderson
C.E. ANDERSON

Subscribed and sworn to before me a Notary Public this 10th day of October 1990.

/s/ Faye Oroz
FAYE OROZ
Notary Public

Notary Public for the State of Ohio

My Commission Expires Feb. 4, 1995

APPENDIX E

LAWRENCE M. MANN
ALPER & MANN
Suite 851
400 North Capitol Street, N. W.
Washington, D. C. 20001

MONTE BRICKER
BRICKER, ZAKOVICS & QUERIN, P.C.
1200 Wilcox Building
506 S.W. Sixth Avenue
Portland, Oregon 97204-1590
Attorneys for Plaintiff

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF OREGON

Civil Action No. 90-51-JU

BROTHERHOOD OF LOCOMOTIVE ENGINEERS,
Plaintiff,

v.

SAMUEL K. SKINNER, *et al.*,
Defendants.

County of _____)
State of _____) ss:

AFFIDAVIT OF JEAN CHRISMAN

1. My name is Jean U. Chrisman, I reside at 5525 North 14th Road, Arlington, Virginia 22205.

2. I am the former Director of the Office of Safety Programs for the Office of Safety, Federal Railroad Administration (FRA). I retired from employment with FRA in October 1981. Prior to assuming that position I served in the FRA's Office of Safety as the Chief of the Compliance Division, Chief of the Field Operations Division, and Special Assistant to the Director of the Bureau of Railroad Safety. Prior to the transfer of the railroad safety functions from the Interstate Commerce Commission (ICC) to the Department of Transportation and FRA in 1967, I served as a field Inspector (Hours of Service), and as a Zone and Field Supervisor for the ICC. As a field inspector for the ICC I was one of twelve Hours of Service Act (HSA) Inspectors in the United States.

3. I also spent 15 years in various operating department positions (all subject to provisions of the HSA) with the St. Louis Southwestern Railway Company.

4. My duties as Director of the Office of Safety Programs required me to coordinate FRA field inspection forces throughout the United States. At that time there were approximately 300 inspectors and supervisors located in eighty safety districts around the United States whose duties and responsibilities were to administer and enforce the various rail safety laws and regulations, including the HSA. In coordinating the FRA field inspections, my duties also included maintaining and assigning for investigation all complaints sent to FRA which alleged violations of federal railroads safety statutes, including the HSA.

5. I have reviewed the complaint and answer filed in this lawsuit. I am personally familiar with the provisions of the HSA and the interpretation by the FRA of the provisions applicable to the facts in this lawsuit.

6. During the past several months I reviewed many HSA complaints that had been submitted to the FRA by railroad workers represented by the United Transportation Union and the Brotherhood of Locomotive Employees.

Each of the complaints showed facts where railroad workers were required by a railroad to remain on a train after expiration of the maximum 12 hours allowed railroad workers to be on duty by the HSA. In many of the complaints I reviewed, employees had remained with the train several hours over the 12 hour limits of the HSA, and in some cases the excess time was up to 10 additional hours.

7. I was informed that in each case the employee was not permitted by the railroad to leave the train. Further, I was advised that the employees were, at the very least, responsible for protecting the train against vandals, assuring that the brakes remains secured so that there would be no undesired movement of the train, and in some cases to observe passing trains for any obvious safety defects, and to await any further instructions by the railroad.

8. In my various positions both at the ICC and at the FRA, in enforcing the HSA, if an employee was not free to come and go as he/she pleased at the point of relief, the time was considered time on duty. The FRA consistently interpreted the HSA as stated above until my retirement. For example see FRA violation Report No. 108 dated March 16, 1981 (attached hereto). There a conductor was denied a request that railroad allow his wife to pick up the crew after being relieved. The dispatcher instructed the crew to remain with the train and the FRA inspector filed a violation report because the crew was not free to come and go as they pleased.

9. I am familiar with the statutory changes to the HSA in 1969 (which became effective on December 26, 1970), and the subsequent amendments by Congress. In each case the purpose of the changes by Congress was to provide greater protection to employees, because of the abuses by some railroads and to help eliminate accidents caused by fatigue. Congress did not change the original law that time on duty shall terminate when the employee is finally released from duty. Also in clarifying deadhead transportation the Congress made it clear that

it included only the time actually spent in traveling from duty to point of final release.

10. I believe the above is particularly significant because Congress began consideration of changes in the the HSA soon after a court decision in 1967. A district court in Pennsylvania had ruled that as long as an employee is subject to orders of the railroad, such employee's time is being consumed on behalf of the railroad at its directions and for its presumed benefit. Therefore, such time was "on duty". Congress was certainly aware of that decision, but it did not disagree with the case, nor change the impact of the decision in the 1969 amendment or later changes in the Act.

11. One change that Congress made in 1969 was that all time available for rest at other than a designated terminal is counted as time on duty. This provision completely settles the point that the period of time before the crew begins actual travel in deadhead transportation is time on duty.

12. I have reviewed the letter to J.W. Walsh, Associate Administrator for Safety at FRA from Lawrence M. Mann dated August 17, 1988 and the response by Gregory B. McBride, Assistant Chief Counsel for the Safety of the FRA, dated August 4, 1989. I believe that Mr. McBride's response is inconsistent with the requirements of the HSA. Further, by such interpretation as in the McBride letter, it would allow the railroads to circumvent the requirement that an employee after 12 continuous hours on duty be given 10 hours off duty. The employees in these cases were given only 8 hours off duty, since the railroads instructed the employees to mark off at 11 hours and 59 minutes to avoid application of the 10 hours off duty.

Further affiant sayeth naught.

/s/ Jean U. Chrisman
JEAN U. CHRISMAN

Subscribed and sworn to before me a Notary Public this 27th day of Sept. 1990.

/s/ Rosemary G. May
Notary Public

My Commission Expires: 5/25/92

APPENDIX F

[Logo]

U.S. Department of Transportation

Federal Railroad Administration

ISSUES IN LOCOMOTIVE CREW MANAGEMENT AND SCHEDULING

Office of Policy
Washington, DC 20590

John K. Pollard

Volpe National Transportation Systems Center
Cambridge, MA 02142-1093

February 1991
Final Report

EXECUTIVE SUMMARY

The purpose of this study is to explore matters related to the scheduling and management of locomotive crews, particularly as they impinge on fatigue and stress. The intent is to provide FRA and other concerned officials with an understanding of how crews are scheduled currently, the causes of unpredictability in schedules, whether various aspects of current practices may contribute to fatigue and stress, and what options exist to improve matters.

Since very little documentation exists pertaining to these questions, this exploration was conducted almost entirely by means of interviews with operating managers, dispatchers and crew callers on various railroads, discussions with BLE and UTU officials and focus-group sessions with working engineers, as described in Section 1. A representative sample of seven Class I railroads participated.

Section 2 of this report describes the mechanics of scheduling trains and crews on each of the seven roads. The timing of scheduling decisions, current problems and planned improvements in communications and control are discussed.

Section 3, based primarily on the comments and views of engineers in the focus groups, describes the principal factors contributing to fatigue and stress in the current environment. These include:

- uncertainty as to the time ones next job will be called,
- excessive working hours (at certain terminals),
- long commutes and waiting times (for some workers),
- the poor condition of locomotives and other equipment (at some locations),
- unsatisfactory conditions for sleeping at some terminals,

- poor distribution of workload among the crew, and
- interpersonal conflicts with dispatchers and crew callers.

To this list, many managers would add deliberate choices by crewmen to do something other than resting even when they knew the should be resting. Attempting to make quantitative statements about the relative importance of each of these contributors to fatigue would require appropriate survey data, which is not available.

Railroad management seems well aware of these problems and inclined to take action on some of them. In Section 4, these possibilities are discussed. In particular, most railroads have plans to upgrade communications and control systems over the next few years so as to improve their ability to forecast train arrival and departure times. Providing an eight- or ten-hour advance notice of call accurate to plus-or-minus two hours 90% of the time or better is viewed as a goal achievable within three or four years by most of the managers interviewed. Engineers and labor officials felt the prospects for meeting this target would be greatly enhanced if there were a penalty payment assessed for each failure to supply such notice.

Because the vast majority of road crews work in first-in, first-out rotating pools, advance knowledge of train departure times is only half the solution to providing advance notice of call. In many situations, when one worker unexpectedly "marks off" (becomes unavailable because of illness or any other reason) every other worker with lower standing in the same pool moves up one position in the standings, i.e., leaves on an earlier train than previously estimated. Providing an accurate advance notice of call would be impossible in such situations. However, changing these practices could be done only in collective bargaining. Adoption of such changes should be beneficial to both sides and may proceed expeditiously once systems for predicting train departure times accurately are working well.

Some of the other sources of fatigue and stress, related to the condition of equipment and facilities, will require significant financial outlays to correct. These raise questions about economic issues which are beyond the scope of this study. However, many others are low-cost items, such as, broken air conditioners and wheel-revolution counters.

Many of the remaining causes of stress and fatigue result from failures to adapt to changes in technology, organization and location of facilities. Following these changes, seniority rights have left a good many individuals in jobs which do not suit them very well in one way or another. Workers are often mismatched to their jobs in the sense of having been compelled to move away from communities to which they have strong ties, or in the sense of having very long commutes (longer than 50 miles), or sometimes in having to do work which they dislike (e.g., redundant operating employees assigned to clerical jobs). Only the passage of time, adjustments in relative wages and salaries, and/or "buy outs" can eliminate these individuals who are mismatched to their jobs. Other failures to adapt to change are rooted in provisions of labor agreements dating back decades. By and large, both labor and management know what needs to be done, but actually doing it is often impeded by the gamesmanship of the negotiating process. In many cases the result of the bargaining process is a phased-in introduction of some change so that it affects only new hires. Thus periods of more than 20 years may lapse before some of the desired changes described herein are fully implemented.

1.0 INTRODUCTION

1.1 Background

In order to examine the subject of fatigue and possible sleepiness in relationship to the job of railroad operating personnel, it is necessary to understand thoroughly the mechanics of the crew scheduling process and the notification (crew calling) procedures currently in use. The scheduling and calling of railroad operating crews is a function of the union-management labor contracts and the demands of an efficient rail freight system. Although railroad personnel have a working understanding of their own systems, documentation of these systems comprehensible by outsiders does not exist. A systematic examination of how crews are scheduled, and the potential effects on safety, needs to proceed from specific factors. Careful scrutiny of the operating environment is necessary in order to test hypotheses and to understand the full costs and benefits of implementing alternative practices.

1.2 Objectives

The purpose of this effort is to develop a report that describes the present crew scheduling and notification systems in objective, straightforward terms. For each railroad studied, key decisions and information flows affecting crew calling are identified. Particular attention is focused on the causes of uncertainty in each of these decisions. Ideas for improvements have been collected from each person or group interviewed.

An understanding of how uncertainty affects fitness for duty has also been sought. In the absence of established objective measures of fitness for duty, the best alternative is simply asking working engineers about their experiences and what causes stress and fatigue.

1.3 Approach

Examination of the literature revealed nothing in the way of description of how crew scheduling systems work. Although there is a substantial body of research on the effects of sleep deprivation and disruption of circadian rhythms, none has been found which focused on locomotive crews. The few recent publications which relate to

railroads at all have been concerned with training personnel to cope better with their odd working hours, rather than exploring the causes of those unpredictable hours and the prospects for reducing the uncertainty.

In view of the absence of useful documentation, the approaches taken for this project focused on gaining an understanding of the issues through discussion with persons directly involved with managing and scheduling locomotive crews and with the working road engineers.

1.3.1 Interviews

The bulk of this report is based on interviews conducted with staff and operating personnel of several major railroads. These interviews were conducted on site at dispatching and crew-calling centers operated by the participating railroads. Depending on the organization of the railroad in question, these sites may have been located at the division level, at the single centralized facility for the entire railroad, or at some intermediate level.

Most of the interviews were arranged by writing and/or telephoning each railroad's vice president for operations and explaining the objectives of the project. Further arrangements were then made with whatever officials were designated by senior management. In some instances, contacts were initiated at the division level or directly with the manager of crew calling.

Nearly all of the railroads contacted agreed to participate. The managers involved proved most generous with their time in providing full and frank responses to all questions. Two of the roads, Burlington Northern and CSX, contributed glossaries of crew-calling terminology, which were merged and reproduced as Appendix A.

Several labor officials were also interviewed. These discussions focused on their perceptions of the effects of current scheduling practices on the fatigue and stress levels of their members and their ideas for improvements.

As with management, cooperation with the study was excellent.

1.3.2 Focus Groups

In order to gain insight into the perceptions of engineers about the factors causing stress and fatigue, a series of focus-group discussions was arranged through the cooperation of the Brotherhood of Locomotive Engineers. These discussions allowed the author to question about two dozen engineers and directly observe their reactions to various proposals for change.

The first of these groups consisted of six engineers working out of a major East Coast terminal. Their situation was one in which train departure times were relatively more predictable than on most other railroads, but working hours were greater due to a shortage of staff. Most worked in pools on jobs of 140-150 miles, but two had assigned service runs of about 300 miles.

The second group consisted entirely of engineers working in road-freight pools. About half of them worked in interdivisional pools with runs of 232 or 256 miles; the remainder worked on a 143-mile run. Their monthly work quotas were based on 3900 miles, so that those in the long pools needed to work only eight or nine round trips per month. Working hours averaged slightly more than 40 per week in this group, but total hours away from home ran to 70-75 per week.

In the third group, most of the jobs were in pools exceeding 200 miles, but two were from extra-boards protecting such service, and two were from helper districts. Monthly quotas were based on 3800 miles, which implies eight round trips per month. An average of about 48 working hours per week were required to complete two round trips.

3.0 SOURCES OF STRESS AND FATIGUE IN CURRENT PRACTICES

This discussion of the sources of stress and fatigue is based almost entirely on the remarks of two dozen working engineers made during the three focus group sessions described in Section 1.3.2. This summary of the sessions was circulated to the BLE local and general chairmen who organized the sessions for their review and reflects any corrections made by them.

At the start of each focus-group session, there was a general discussion of the significance of stress and fatigue in the lives of engineers. In every group, fatigue was felt to be a major problem, at least as much of a threat to safety as substance abuse. Efforts by management, unions and government to curtail substance abuse were viewed as having been largely successful; comparable efforts to mitigate fatigue and stress are sought.

Numerous incidents or near accidents were described in which an engineer had dozed off. They noted that many of these incidents went unnoticed and that a large proportion of those that were noted by management were dealt with through informal disciplinary practices, which generated no records. Thus they felt statistical analysis of accident and incident records could not give a meaningful picture of the significance of fatigue.

3.1 Uncertainty as to Time of Call

In two of the three groups, unpredictable working hours were identified as the most important single cause of stress and fatigue, although several other significant causes were also present, as described below. (In one group, which was based at an unusually busy terminal, the sheer number of working hours was the primary cause, as discussed in 3.2.)

Everyone of the engineers agreed that there was too much uncertainty about when he would be called to report for work. Because of it, all commitments to family and friends were tentative and subject to frequent disruption, which contributes to a considerable amount of stress and discord within many families.

Many participants noted that sleep was often taken at times and in amounts which were inappropriate to the hours on duty which followed. If an engineer tried to sleep every day that there was a possibility he would be called to work that night, he would hardly ever be able to participate in family activities. Hence there was a tendency to go ahead with normal daytime activities and take the risk of having to work without being properly rested, whereas if there were reasonable certainty about when jobs would start, most engineers would be willing to give up or reschedule the other activities. There were also many instances cited in which jobs were not called until long past the time originally estimated, which resulted in situations in which the engineer was ready to sleep again when the call finally came. In short, there was general agreement that the more certainty as to when the next job will be called, the more likely an engineer is to be appropriately rested.

Closely related to uncertainty about the timing of jobs was the sense of lack of control over one's life. At one of the railroads, management strongly discouraged marking off for personal reasons, so much so that was hardly ever done. Instead, men who wanted time off were forced to lie by calling in sick, to let the telephone go unanswered or to verbally abuse the callers. Men whose personal ethics prevented their using these tactics ended up working even more because of the time off won by the liars and cheats. The other two roads generally allowed marking off for one or two or three days without penalty.

The causes of uncertainty about time of call were numerous and varied substantially among the three railroads. At the first focus group, there was a perception (later confirmed by management) that the railroad's train

scheduling system is sufficiently advanced that it could provide eight hours advance notice of jobs about 90% of the time. However, in practice the engineers report that they are unable to get the information they want for the following reasons:

(1) The usefulness of the information available from the crew callers is highly variable. Some callers are almost always helpful and provide all the information at their disposal. Other callers are habitually prone to withhold information and are often downright rude. Sometimes the callers are so busy that they really do not have time to provide complete information.

Callers sometimes withhold information deliberately even when they have time to talk because they know that crew members would prefer to avoid certain jobs and that if crewmen can estimate when those jobs will be called, they will not answer the phone during that period in hopes of getting the next (and better) job instead.

(2) Although information on standing is available from a computerized voice-response system, it is apparently not updated automatically in real time. Furthermore, information on train lineup is not included, hence the system is not very useful for estimating when one's next job will be called.

(3) Crew members have not been given copies that would permit them to check on train lineups from the computer terminals accessible to them.

(4) As a result of the shortcomings of the other means of getting information, crewmen frequently resort to calling Yardmasters and Trainmasters to find out when trains are likely to ready for departure. Management attempts to discourage this practice but it goes on anyway.

(5) Although the railroad's computerized system was designed to provide access from personal computers via dial-up phone lines, this option has never been implemented. The rationale for this decision was unknown.

The engineers in the second focus group worked on districts in which train dispatching was only partially computerized and crew management was still predominantly manual. Information about train locations and lineups was often simply unavailable to crew callers on a timely basis. Contributing further to their uncertainty they described the following:

(1) Even when accurate information regarding train lineups and crew standings was available to crew callers, some of them failed to make it available to engineers. The reasons for their failure ranged from being too busy, to incompetence, to personal hostility toward a particular engineer calling.

(2) Standings were frequently readjusted to satisfy various objectives of management and/or of labor agreements. Examples of reasons for these changes include minimizing away-from-home lodging costs, minimizing deadheading costs, and meeting mileage quotas of different districts supplying crews to an inter-divisional pool. The timing of the changes in the pool operation and the standings of individual engineers was unpredictable.

(3) Informal, verbal agreements between callers and local chairmen can further alter the standings of individual engineers in ways that are both unpredictable and unreported to involved persons.

(4) Trains, except for intermodal or other high-priority traffic, were often delayed until an away-from-home crew was rested in order to minimize costs. This practice changes both lineups and standings and creates additional uncertainty.

(5) Clerks were often derelict in updating recorded announcements of standings information because of other demands on their time. Examples were described in which announcements were more than 24 hours old.

(6) Reaching either a crew caller or a recorded announcement was sometimes difficult. Busy and unanswered phones were a common occurrence.

(7) Those engineers who worked to a distant terminal which had computerized standings available reported that the service was as yet of little value since train lineups, deadheading lists and other pertinent items were not usually included.

At the third session, computerized dispatching and crew-calling systems had recently been installed, but the engineers said that the accuracy of estimates of train departures was still poor for the following reasons:

(1) The dispatching system does not yet have all the necessary automated communications links in place. Thus the dispatchers are often working with information several hours old.

(2) Complaints about dispatching errors were common. Numerous cases of being stopped or held in a siding for an hour for no apparent reason were reported. Meets were often poorly coordinated i.e., one train was put in a siding much earlier than necessary or desirable for efficient operation. These errors caused delays and introduced additional uncertainty into the schedule.

(3) Certain dispatchers were reported to delay trains for no legitimate reason, but rather to punish engineers who had incurred their displeasure. Management was described as unable to fire these dispatchers because it was so difficult to attract anybody to fill the positions.

(4) Locomotive reliability is poor. The probability that one or more units in a consist will fail on a given

trip is estimated at 50%. Although it is usually possible to reach the destination, arrival will be delayed significantly. Poor reliability results from an inadequate maintenance program coupled with tendency on the part of middle managers to defer expenditures for replacement parts and equipment. Instances of denial of equipment problems on the part of various managers were cited by several participants. Failures by round-house crews to fill fuel tanks and sand boxes were also a problem.

(5) Many of the run lengths were chosen by management to require eight hours or more even with everything operating normally. There is not much leeway to account for the minor delays and/or extra work (doubling a hill, pickups and setouts, etc.) that occur most of the time. The result is that long-pool crews frequently "die" under the Hours of Service Act. They are compelled to tie up and wait for transportation to their destination terminal, which adds further delay and uncertainty. Participants reported numerous instances in which 15 or 16 hours had elapsed from the time they reported for duty until they reached their destination terminal or place of rest.

Dealing with all of these problems is a major challenge for the railroads. Engineers suggest the following goals:

(1) Operating most trains on predictable schedules. Substantial investments in locomotives and track, improvements at bottlenecks, etc. may be required in some situations.

(2) Dispatching systems must be upgraded and linked to other railroads and major customers to provide reasonably accurate estimates of train arrivals and departures.

(3) An adequate information system for operating employees should show train lineups in each direc-

tion, standings (with each employee's name listed along with his rest status and any other pertinent information, such as intended deadheads), and an estimate of when the calling employee will next go to work.

(4) The information should be updated in real time.

(5) Access to the information should be available through a variety of means including automated voice response, talking to the callers, remote terminals and home computers. Each medium should have sufficient capacity that busy signals and unanswered lines are rare.

(6) Crews should be called eight to ten hours in advance, with a tolerance of one or two hours. (There was great doubt that any such performance would ever be achieved unless there were a significant penalty payment for non-compliance incorporated in labor agreements.)

3.2 Total Hours of Work

At the first focus group, it was agreed that the most important cause of fatigue and stress was simply the total number of hours of work that had to be done. An upsurge in business, several retirements and some transfers to Amtrak had left the pool significantly undersized. The inherent delay in recruiting and training replacement engineers had led to a situation in which engineers were required to work 21 days straight in order to get one day off, which was expected to persist for another few months. Although these engineers also identified a number of changes in scheduling, information availability, etc (discussed below) which could help mitigate stress and fatigue, none of these were as important as simply reducing the work week to 40 to 50 hours, at least for those men who wanted the reduction.

In this group, there was an extended discussion of the issue of who gets which job. Like almost all road engineers on U.S. railroads, their earnings were based on the number of miles worked in a given pay period. However the number of hours required to cover a given number of miles varies greatly among different runs in their district, For example, some 300-mile runs can almost always be completed in six hours, while some 150-mile trips usually take more than 10 hours. Furthermore, some jobs generally offer a quick return trip, while others usually entail a two-day absence from home. Hence, the present compensation system creates a strong incentive to try to avoid undesirable jobs and to work as much as possible on those that bring maximum pay for minimum hours. This leads to "call dodging" (taking the phone off the hook or letting it go unanswered at the time an unwanted job is expected to be called) and "sharp shooting" (other manipulative practices intended to secure desirable jobs and/or avoid unwanted ones). The result is a situation that provokes cheating and conflict, especially when a terminal is very busy and many employees are working more than they desire.

The group estimated that a majority (about 60%) of the local membership actually preferred the heavy workload because it allowed them to earn up to about $1800 a week. However, a substantial minority felt that the fatigue and disruption of relationships with their families were not worth the extra money they were earning. They noted that their colleagues who had transferred to Amtrak had given up ten to fifteen thousand dollars a year in earnings for a regular five-day-week job, but were happy with the change. Several members aspired to certain assigned jobs that would guarantee them shorter, regular hours but lower income, but figured they would have to wait for years because of the small number of such positions.

In the other two focus groups, members expressed general satisfaction with the amount of work, which generally averaged eight to ten round trips per month or 40 to 50 working hours per week (70 to 75 hours per week away

from home). No one voiced strong objection to the number of hours or miles worked. Every man who commented said that the trend toward more inter-divisional runs had tended to reduce hours worked, thus improving the quality of his life by allowing him more time with his family.

Goals for changes in this area include:

(1) Maintaining pool sizes sufficient to insure that no one is compelled to work excessive hours. This goal is generally met, but better planning to anticipate problems and greater flexibility in converting trainmen to engineers are needed.

(2) The trend toward longer pools is helpful and should continue.

(3) Limitations on maximum number of hours worked per month in combination with a fixed base salary were regarded as desirable.

(4) Penalty payments are needed to insure that "dead" crews are not left waiting hours for transportation to their destinations or places of rest.

3.3 Waiting and Commuting Time

Several engineers complained that long commutes are another major contributor to fatigue, because of all of the consolidations and reductions in employment that have taken place in recent years. Some train crew members are now working out of terminals more than a hundred miles from their homes. A few were mentioned in the focus groups who live more than two hundred miles from their terminals, and one lives about six hundred miles away. Most of these long-distance commuters were trainmen, not engineers.

Such employees frequently arrive at work ready to sleep even though they have had eight or ten hours off duty. They spent a good deal of their time on the job sleeping,

except when switching or other activities required their participation. Over a period of years, these problems should be reduced as employees relocate, but there was general apprehension that future mergers and reorganizations could create new disruptions.

3.4 Equipment Problems

At one of the focus groups, inadequate maintenance of locomotives was cited as a major contributor to fatigue not only because of its impact on schedule reliability, but also because the equipment failures directly caused increased work load and physical discomfort. These engineers said they frequently had to work with bad-order equipment on locomotives, including dynamic brakes, speedometers, telemetry devices and counters. The most common defect was the lack of a working wheel-revolution counter (needed to tell when the rear end of the train has cleared a specific point, as when stopping on a siding) resulting from the input connection never having been installed. Engineers were particularly outraged that they would be held to blame for an accident caused by this faulty equipment even when they had filed bad-order reports. They noted that some managers were ignoring these reports in order to stay within their budgets.

A second major source of fatigue for the engineers in this group was the extremely hot weather characteristic of the districts in which they worked. Although their labor agreements required that all locomotives be equipped with air conditioners, they were not kept in good repair. Participants estimated that only 10 to 20% of their runs were made with a working air conditioner in the lead cab. As a result they often worked in temperatures above 100 degrees for many hours and suffered great fatigue as a result.

Some of the inoperative coolers were thought to be the result of sabotage by round-house crews. Labor agreements require that if one unit in a consist has a working

air-conditioner, that unit must be placed on the point by the hostlers. However shuffling the consist order and/or turning units on the "wye" can easily take 30 to 60 minutes. Hostlers find it much quicker to disconnect a wire or pull a fuse so that no units have a working A/C and they can avoid reordering the consist. By agreement, engineers can put the unit with the working A/C on the point, but doing so delays the train and incurs the displeasure of the dispatcher, who may punish the engineer later.

In each of the focus groups there were complaints about a variety of less-common equipment problems which can contribute to increased workload and fatigue. These included: speed restrictions related to special cars; glare from rain and snow reflecting from high-mounted headlights on some locomotives and new equipment installed on engines without providing adequate instruction and/or simulator training. One incident was described in which a crew was ordered by a supervisor to take a train which was unsafely built. There was anger about managers' lack of concern for safety in such situations.

As goals for improvements in these areas, the engineers suggested that:

(1) Locomotives should be maintained or replaced to bring power reliability up to 98 or 99%. In particular, air-conditioner maintenance should be mandatory in hot climates.

(2) Stronger regulations and/or agreements are needed to make certain that engineers are not compelled to operate trains with defective equipment or which are poorly built. Rights of refusal comparable to an airline pilot's were sought.

3.5 Inadequate Sleep at Away-from-Home Terminals

There was also general dissatisfaction expressed because of inability to get sufficient rest at the away-from-home

terminal. Eight hours off duty seldom translates into more than four hours sleep because of the time required to get to a motel and eat, coupled with the fact that sleep will be interrupted by a telephone call two hours before the next job starts.

In two of the groups, the rest facilities provided by the railroad were roundly criticized for their unsuitability as places to sleep. Some were temporary buildings ("modules") located at yards. In these noisy locations, their thin walls and inadequate air-conditioners resulted in very poor quality sleep. Frequent instances of being awakened by the staff were recounted, which were the result of the staff having failed to keep track of which person was in which room.

Sleep quality was often degraded at away-from-home terminals by noise and other unpleasant environmental conditions in the motels contracted by the railroads. Rooms adjacent to pools or parties were a common complaint. Failures on the part of motel managers to inform house keeping staff that railroaders were trying to sleep in the daytime were another.

Attempts to sleep out of synchronization with ones circadian rhythm were also a frequent cause of poor-quality sleep.

Suggested improvements in this area were:

(1) Crews should always be allowed the option of claiming ten or twelve hours rest whenever they feel they need it. At present some railroads permit these requests for some employees, but the practice should be universal.

(2) Management should pay increased attention to the motels contracted to provide away-from-home rest. These motels should be required to provide blocks of rooms for railroaders away from pools and function rooms. Housekeeping services should be timed to avoid interfering with sleep. In some in-

stances, the motel is grossly unsatisfactory (filthy, located near an airport runway or rail yard, etc.) and the contract should be awarded to another hotelier. Long-term contracts should be avoided so that the railroad can maintain some leverage to force motel managers to attend to the special needs of train crew members.

(3) Trailers and temporary buildings in yards or other noisy locations should be eliminated.

3.6 Conflicts within the Locomotive Crew

All of the engineers complained to some extent about how little help they receive from their fellow crew members. In one group, most said they hardly ever got any relief. Numerous examples were cited of conductors and brakemen who slept for hours and refused to help the engineer in any way.

Some engineers strongly favored converting conductors and brakemen to co-engineers with the expectation that as such they would drive the train for a substantial portion of each trip and actively assist the engineer in dealing with various other tasks.

3.7 Conflicts with Dispatchers

There were complaints about errors made by dispatchers in each focus group, but they were reported to be much more frequent in one group. This group's railroad had recently reorganized dispatching functions in a way that left many persons assigned to a center when they would rather be somewhere else. Dispatchers are reported to be experiencing an unusually high level of stress, as evidenced by fist fights and domestic violence among the staff. This situation, coupled with the dispatchers' dissatisfaction about receiving only about half as much income as the engineers, has resulted in numerous instances in which dispatchers deliberately delayed trains simply

to punish the engineers. Numerous cases of being stopped or held in a siding for an hour for no apparent reason were reported. Meets were often poorly coordinated i.e., one train was put in a siding much earlier than necessary or desirable for efficient operation. These errors caused delays and introduced additional uncertainty into the schedule.

In this group, certain disaptchers were reported to delay trains for no legitimate reason, but rather to punish engineers who had incurred their displeasure. Management was described as unable to fire these dispatchers because it was so difficult to attract anybody to fill the positions.

Difficulty in reaching dispatchers by radio was reported by most of the engineers in all of the groups. In these situations they felt anxious because they could not find out what was going on. Some of these difficulties were due to equipment faults or poor-reception conditions, but some were known to have resulted from dispatchers turning down the volume on their radios so that they could do other work without being disturbed by engineers.

Most of the sources of conflict with callers would be eliminated if there were a requirement for a binding advance notice of call (eight or ten hours with penalty for significant changes). Engineers would also like:

(1) Option to mark off at least one week-end per month without penalty.

(2) Option to mark off two days per week without penalty, but limited to low traffic days, typically Mondays and Tuesdays.

(3) Efforts by management to attract more competent employees for crew-calling positions.

APPENDIX G

U.S. Department
of Transportation

Federal Railroad
Administration

ENGINEMAN STRESS AND FATIGUE: PILOT TESTS

Office of Research and Development
Washington, D.C. 20590

June 1992
Final Report

ENGINEMAN STRESS AND FATIGUE

1. INTRODUCTION

This Task Order involved the observation of the effects of fatigue on the train handling performance and vigilance of a limited number of locomotive engineers while operating the Federal Railroad Administration (FRA) Research and Locomotive Evaluator/Simulator (RALES). Subjects operated on an hourly cycle of 12 work-12 rest-8 work as "normal" cycle followed by an hourly cycle of 12W-8R-8W the following week as a "fatigue" cycle.

1.1 THE STUDY

During the months of December, 1991 and January, 1992, four certified train service locomotive engineers were individually oriented to the operation of the RALES FRA Class 1 simulator at the IIT Research Institute (IITRI). The subjects were also given a sleep/work diary to keep.

Approximately one week after the orientation, each subject reported to IITRI, handed in the completed sleep/work diary and commenced to perform repeated simulated runs of approximately 1½ hours duration over a 12 hour period. There were two territories, and these were alternated in the same order for each subject. An observer was present, in the locomotive cab, during each run.

Scoring of various aspects of train handling were collected as well as the observer's run observation notes. Following the 12 hour period, the subject was taken to a nearby place of rest and not disturbed until 10 hours later, when a "crew call" was made to inform the subject to report in 2 hours. Within two hours of the call, the subject returned to the RALES facility and performed the same schedule of runs followed during the previous day. Scoring of train handling, observer notes and an exit

interview were collected. The subject was given a new work/sleep diary to keep.

Approximately one week later, the subject returned to repeat the two day sequence with the exception of the rest period being only 8 hours in duration with the "crew call" coming after the 6th hour. All other conditions and data collection remained the same as those used in the first experimental period.

1.2 OVERVIEW OF RESULTS

Subjects were observed to doze off while running during the experiment and were able to report this fact as well as observe that they could have made a serious mistake due to tiredness. They produced performance errors during the study which were potentially hazardous, particularly in regard to signaling for crossings and observation of speed limits.

As a group, the subjects were not found to perform any differently during the second day of the normal (12-12-8) schedule than they were during the second day of the fatigue (12-8-8) schedule. While subjects were more likely to indicate during exit interviews that they were more fatigued at the end of the fatigue schedule, they were more likely to indicate they had dozed off during the normal schedule. Observers tended to corroborate these reports.

There is a possible explanation for the lack of difference between the normal and fatigue schedules. The sleep records of the subjects were plotted and found to be atypical in comparison with those of non-engineer persons. It seems possible that the controlled, low interruption rest periods of the study were, in effect, superior to the rest normally attained by the subjects. This is not to say, however, that the subjects failed to demonstrate dangerous levels of fatigue during the study.

There was no clear deterioration in train handling performance between the first and second days (in either the normal or fatigue schedules). This is not to say, however, that the engineers performed without error. Speed limit infractions, failures to blow the horn for crossings, rapid throttle changes and excessive train forces were evident for each of the subjects. While aggressiveness (heavy applications of throttle and brake) in train handling without a concomitant reduction in elapsed time was evident, this behavior also was not related to schedule or day. There did not seem to be a correspondence between bouts of dozing as noted by observers and runs in which an increased number of errors occurred. It may be that a more time sensitive method of performance evaluation would reveal a relationship between the condition of observed dozing and train handling errors.

Core body temperature was recorded at the request of The Volpe National Transportation Systems Center (VNTSC) for each of the subjects throughout the two experimental periods. Complete temperature data were not recorded for each subject due to body mass of subject, equipment failure, or possible operator error. Those data which were collected provided traces of temperature fluctuations which appeared to agree with subjects' scheduled sleep periods during the study. The data were forwarded to VNTSC for analysis. A fitness for duty test (*Synwork*) was also administered at various periods during the study at the request of VNTSC. The *Synwork* results were reviewed at IITRI and showed progressively increasing total performance scores which would seem indicative of practice effects over day one versus day two results:

	Error/ Mile	Attack	Elapsed Time	No. of Runs
Rochelle District:				
Day 1 Normal Schedule	0.42	1108.50	116.00	8
Day 2 Normal Schedule	0.46	1055.43	111.71	7
Day 1 Fatigue Schedule	0.37	1101.45	108.45	11
Day 2 Fatigue Schedule	0.40	1084.75	110.75	6
Davis Junction District:				
Day 1 Normal Schedule	0.67	1193.63	122.13	8
Day 2 Normal Schedule	0.60	1255.75	125.00	4
Day 1 Fatigue Schedule	0.64	1236.25	122.00	8
Day 2 Fatigue Schedule	0.66	1219.50	122.75	4

Since there were differences in engineer performance between first days and second days for each of the runs, a statistical test called the "t test" was used to determine the extent to which differences between days could have happened by chance alone. In the case of the current study, it was decided that any difference which could have occurred by chance 5 times in 100 or less would be considered significant. The selection of the .05 significance level is arbitrary, but consistent with research of this kind.

Two constraints which apply to the t test are number of samples (degrees of freedom) and expected direction of difference (one vs. two tailed). There were sufficient degrees of freedom to calculate the difference between pairs of means (t test) for each of the performance criteria. No test had a significant result at or beyond a .05 (2-tailed) level.

6. DISCUSSION OF RESULTS

No differences were found in subject performance between the "normal" and the "fatigue" schedules. One possible reason for the failure to find differences was that both the normal and the fatigue schedules of the study inadvertently provided the subjects with an assured time at which they could expect to sleep. The sleep/work diaries for the subjects indicated a history of adequate

sleep in terms of hours, but irregular patterns for when that sleep would occur. Another point which needs to be made is that the "normal" schedule of the study did not necessarily describe an optimal working condition. Twelve hours of work followed by 12 hours of rest resulted in a deterioration in train handling on the following day.

As indicated earlier, the subjects seemed to have incidents of nodding or inattention without regard to schedule or time of day. Subject S9431 did show an increase in observed incidents of nodding or inattention during a period in which sleep would normally have been more likely, but posted a relatively high performance rate for the particular run in which the events took place. One plausible explanation is that engineers do have disrupted sleep patterns (see sleep histories section) which increase the chances of decreased attention during periods in which relatively low levels of operational performance are required.

The subjects indicated, and the observers noted a marked tendency to doze in those instances where few control actions were required of the engineers. Had unanticipated events such as signal changes a short distance from the head end, torpedoes, locomotive malfunctions or the like taken place during periods of low control demands, the error rates might have reflected a higher level. A reading of FRA accident reports involving sleep often reveal situations which might be characterized as low control demand periods. While safe train handling of heavy freights takes considerable skill, the task does differ from highway vehicle driving in that there are periods in which the task does not include a motor component to prompt attentiveness or threaten immediate disastrous consequences arising from inattention to control.

There is further support for the "low demand" explanation: The Davis Junction run did not differ substantially in terms of terrain from the Rochelle run; it did differ,

however, in terms of a greater number of slow orders and crossings. Subject engineers generally reported that it was easier to remain awake on the Davis Junction run, yet the engineers' error rates per mile for that run were often equal to or higher than the rates for Rochelle. A conclusion could be drawn that the subjects knew if they were dozing off, but were not necessarily aware of the effect fatigue was having on their mile by mile performance. Fatigue induced error and sleep deprivation induced accidents may, in fact, not be polar points on a single continuum. Since the train handling deterioration exhibited by the subjects was not trivial, it may be necessary to think of fatigue and sleep deprivation (or circadian shift) in distinctly separate ways.

As indicated earlier, the sleep patterns of the engineers were markedly different from that of non-engineers. It may be that the enforced rest regimen of the study with a comfortable room away from home at a predictable time where no other engineers or rail crew members were nearby constituted a rest period superior to that attainable in "real life." Had the sleep been more disrupted, or the schedule of work more irregular (such as extra-board engineer's experience of 6 hours of work, 6 hours of rest, 6 hours of work), the results might have been more extreme. Two of the engineers did informally comment that they felt better on the second day of a run than the first, even when they were on the "fatigue" schedule of an 8 hours rest period. Real world engineers often do not know when they will be called and cannot, as a consequence, make as much of rest periods as the subjects of the current study were able to do.

The subjects did make a number of comments about the locomotive cab environment. The study did not use noise or ambient temperature levels considered by engineers to be fatiguing. Additionally, the study did not take place during a period of time in which both subject

engineers and virtually all correspondent engineers have indicated as a particularly difficult time, i.e., just at dawn. It does remain to be seen if this time is relative to time at a particular location on the planet's surface, or an actual characteristic change in the level of ambient light. In the current study, the engineer subjects did not run at the daybreak period but did tend to show elevated error per mile rates when they undertook runs during the period between 0900 and 1000 hours which has also been characterized as a period of drowsiness.

Given the results of other research in the area of fatigue and sleep, one suspects no clear standard exists for an indicator of sleep deprivation or fatgue which would apply equally to all individuals. What may be hoped for, however, is the definition of a borderline of conditions past which a significant number of individuals become dangerously impaired. The subjects of the current study were willing to admit in the exit interview that they had either dozed or could easily have caused an accident due to tiredness at some point during the experiment.

APPENDIX H

FOCUS GROUP REPORT

Federal Railroad Administration
Customer Service

May 1995

Introduction

This report outlines responses collected during focus sessions with field and regional personnel of the Federal Railroad Administration (FRA). It is based upon questions designed to provide information on benchmarking, safety programs, regulatory reform, and organizational culture.

The focus groups were conducted in each of the tight regional offices beginning April 13 and concluding April 20. Approximately 20 FRA employees representing a broad cross-section of the field and region participated in each three hour session. At the completion of all the sessions, a total of 168, or 42% of all field and regional staff had contributed their ideas.

The same seven questions were posed to each group—3 benchmarking questions, 3 questions on safety programs, and 1 question about regulatory reform. All responses were recorded on-site during the sessions. An organizational culture survey was also administered at the conclusion of each session.

This report is organized by question groupings. Verbatim statements extrapolated from participant comments are arranged by dominant themes. Indications for action are offered at the conclusion of each section where appropriate.

This synopsis should be a useful guide and tool for the Customer Service Implementation Team in their search for "best in business".

Section II
SAFETY PROGRAMS

Name 3 key things FRA should consider in evaluating our Safety Program.

Consistency

- Each of the regions do things differently. There needs to be consistency and standardization between the regions.
- Interpretations vary from inspector to inspector. Make sure everyone is doing the same thing in interpretations.
- Railroads shop around for the answers they want because they get different interpretations.
- The regulations should be applicable to what we see every day, like hand brake, when the engine is left unattended, or a shove move.
- Specialists should be taught by one person so there is consistency.

Safety *Assurance* versus *Enforcement*

- Are we allowing our inspectors to be as thorough and persistent in insisting on compliance. Enforcement is not being emphasized. Identify what the safety program/plan is in the field. Do we want enforcement, or what?
- We are worried that with team inspections the railroads will know how long between the next inspection and will lay off their plan until we come back.

APPENDIX I

OHIO RAIL SAFETY INITIATIVE

Department of Transportation

[Logo]

United States of America

FEDERAL RAILROAD ADMINISTRATION

Office of Safety

Region 2

November 1994

* * * *

Still, several safety sensitive issues were identified which the safety iniative team believes would reduce the potential for train accidents. These issues follow:

- Under the present limitations of the Hours of Service Act, railroad employees engaged in or connected with the movement of trains (train and engine crews) may work up to 112 hours in any seven day week. Although FRA does not believe that many workers reach this total, it does believe that 80 to 90 hour work weeks are not extraordinary.

  Under the Law, after a tour of duty of up to 11 hours and 59 minutes, train crews must be given an eight hour off duty period. Within this time frame, workers must travel home, eat, bathe, sleep, and return to their reporting point. This routine may continue for an in-

definite number of days without the worker having the legitimate opportunity to have a day off work. FRA believes that many employees are seriously fatigued. Conrail recognizes the problem but may often be faced with the option of granting workers a day off at a cost annulling guaranteed service trains.

FRA also notes that Conrail has been conspicuously unsuccessful at limiting worker's hours of duty to the twelve hours prescribed by law. Over 75 percent of the violations filed by FRA inspectors in Ohio have occurred on Conrail. FRA Region 2 is responsible for enforcement across a territory that covers all or part of five Conrail Divisions. More than one-half of the violations filed in the Region against Conrail have involved the Dearborn or Pittsburgh Divisions. While almost all of this excess service involves waiting for transportation rather than operating trains, FRA believes that other railroads in Ohio, and other divisions on Conrail have more successfully addressed the problem.

Conrail is apparently concerned with the present work schedules as well. They have responded with the most massive hiring programs for engineers and conductors in the railroad's history.

Training for these new employees does not follow traditional railroad on-the-job skills development. Rather, it is a combination of formal classroom and on-the-job experience with the goal of producing a qualified engineer within six months.

While FRA found few issues with the program or it's results, FRA does believe that inexperience creates it's own subset of issues. FRA believes that a combination of inexperienced new workers, coupled with fatigued experienced workers, makes it critical that management closely monitor performance. Conrail's vehicle for this purpose is the operational testing and inspection program.

Our team's review of performance records disclosed that the Dearborn Division came closest to meeting corporate goals. The Pittsburgh Division did not do as well. The issue was considered sufficiently important that an interim meeting was conducted with the Division Manager. To his credit, the Division Manager altered procedures to make the program more proactive almost immediately. FRA will monitor progress.

- The increased traffic levels on the Chicago Line have corresponding increased radio traffic. This radio traffic level nearly exceeds the capacity of Conrail's existing radio network, particularly in metropolitan areas. While the team commends Conrail for its recent reassignment of radio channels to reduce the problem, it believes that more needs to be done. Short term, Conrail can reduce a portion of the traffic through operational testing to ensure that workers use the channels that they are assigned, and that non-essential use of the radio is minimal. In the longer term, Conrail needs to find ways to eliminate radio "bleed-over", control interruptions from talking mechanical devises and, ultimately, secure more secure and accessible communications.

H. *FUTURE ACTIONS*

As is usual and customary, FRA will conduct a follow-up to monitor the railroads actions and responses to our concerns. This normally occurs within six months. A reduced field staff may be used if appropriate. For reasons which were identified earlier in the summary, FRA is particularly concerned with the quality and depth of Conrail's program of operational tests and inspections.

FRA is also concerned with the railroad's slow progress improving the quality of hazardous materials documentation for TOFC/COFC limited quantity shipments. Progress will be monitored to insure sustained improvement.